LIBRARY

NOV 5 1929

The Dental Digest

November 1929

PROPERTY OF
DENTAL LIBRARY
UNIVERSITY OF MICHIGAN
DON'T MUTILATE OR
REMOVE

Editor~
GEORGE WOOD CLAPP, D. D. S.

Publisher~THE DENTISTS' SUPPLY COMPANY *of New York*

THE DENTAL DIGEST

VOLUME XXXV NOVEMBER, 1929 NUMBER 11

CONTENTS

CONTRIBUTED ARTICLES PAGE

A Further Consideration of Some of the Advantages of Drill Technic for Simplified Exodontia. M. Hillel Feldman, D.D.S. . . 707
A Critical Analysis of Present-Day X-Ray Conditions. Robert M. Fischer, D.D.S. 717
Dental Caries and Pyorrhea. F. W. Broderick, M.R.G.S., L.R.C.P., L.D.S. 721
Nutrition 732
The Psychology of Dental Office Furnishings. Carleton Cleveland, D.D.S. 736
Fédération Dentaire Internationale Prize Competition 738
A Method of Setting a Fractured Mandible. J. A. Heidbrink, D.D.S. 739
Hospitalization of Patients. C. Maynard Woodward, D.D.S. . . . 741
Nitrous Oxid and Oxygen—A Preference for the Extraction of Children's Teeth. Leonard N. Ray, D.D.S. 744
Physical Degeneration. Armand M. Oppenheimer 746
One Way to Open a Closed Mouth. Albert Hallenberg, D.D.S. . 751
Proposed Mouth-Hygiene Program for Jersey City, N. J., Schools. Israel S. Miller, D.D.S. 752
Death of Vethake E. Mitchell, D.D.S. 754
Round-the-World Toothache 756
Charles Nelson Johnson 756

FEATURES

DIGESTS 757
DENTAL ECONOMICS 762
CORRESPONDENCE 765
PRACTICAL HINTS 766
DENTAL SECRETARIES AND ASSISTANTS 770
EXTRACTIONS 774
STATEMENT OF OWNERSHIP, ETC. 775
FUTURE EVENTS 776

THE DENTAL DIGEST
George Wood Clapp, D.D.S., Editor
Allan M. Johnson, A.B., D.M.D., Associate Editor

Published monthly, by The Dentists' Supply Company of New York, 220 West 42nd Street, New York, U. S. A., to whom all communications relative to subscriptions, advertising, etc., should be addressed.

Subscription price, including postage, $1.00 per year to all parts of the United States, Philippines, Guam, Cuba, Porto Rico, Mexico, and Hawaiian Islands. To Canada, $1.40. Great Britain and Continent, $2.75. Australia, $3.25. To all other Countries, $1.75.

Articles intended for publication and correspondence regarding the same should be addressed Editor Dental Digest, Candler Bldg., Times Square, 220 West 42nd Street, New York, N. Y.

The editor and publishers are not responsible for the views of authors expressed in these pages.

Entered as Second Class Matter, at the Post-office at New York City, N. Y., January 29, 1909, under the Act of Congress, March 3, 1879.

THE DENTAL DIGEST

VOLUME XXXV NOVEMBER, 1929 NUMBER 11

A Further Consideration of Some of the Advantages of Drill Technic for Simplified Exodontia

By M. HILLEL FELDMAN, D.D.S., New York, N. Y.

In collaboration with HARRY J. FIELD, D.D.S., Newark, N. J.

For many years it has been the custom of dental operators to make use of the engine and bur for the purpose of cutting away the bony investment of a tooth or a fractured or embedded root, in order to effect its delivery. There are many operators who still indulge in this technic today. Because the usual manipulation of the engine bur is prone to make unnecessary and confusing cuts and shavings in the bone, and because there is genuine danger of overheating the bone, engine-drill technic is justly condemned in many quarters. Dental operators are inclined to use the bur in bone in much the same manner as they would if they were cutting tooth substance; that is, the bur is applied to the tissue and directed with pressure against the tissue to be removed. Even if in this process there is a stream of water being sprayed upon the instrument or upon the cavity being drilled to prevent overheating the tooth, there is the drawback of the clogging of the bur. To remove the debris from the bur, one must cease operating from time to time to *clean* the bur with a wire brush. This technic is, of course, open to question on the score of sterility and surgical cleanliness. The alternative is to make very frequent changes of burs in the handpiece, if one wishes to remove the objectionable feature of wire-brush cleansing.

Undoubtedly these considerations have been responsible for the engine-driven bur technic in exodontia falling into disrepute with the leaders in our specialty. They not only have discarded it from their office procedures, but have removed it from the teaching curriculum of the college. In its place has jumped the use of mallet and chisel force to remove bone overlying the tooth or root which is to be delivered. Because of this, many dental operators have been discouraged from including the extraction of teeth in their daily office practices. Chisels and mallets require special training. While a dentist is well trained in their application to enamel walls, he finds it altogether different when he attempts to use them on bone. He does not know that a chisel directed against bone at a certain angle will cause an injury as severe as if the jaw had been struck with an iron bar or only a longshoreman's fist. A sharp edge is not the only requirement of chisel technic. Angulation and direction of blows are of equal importance. The length of the chisel bevel

also affects favorably or not the injury to the jaw from the impact of the mallet.

Some operators have discarded the use of the mallet and find that they are minimizing trauma to the bone by directing their chisels with hand pressure. But the writer's objection to the hand-pressure chisel technic is that one must use an inordinate degree of force to cut into bone, no matter how sharp the chisel's edge. It is not so simple as some enthusiasts would have one believe. Some bone is exceptionally dense, and some patients are delicate to such a degree as to make the necessary heavy pressure of the hand most disagreeable. My objection to the chisel driven against bone with a mallet is that it shocks the patient, even though the operator be most skillful and cautious. Tender blows will not dislodge bone. We are not dealing now with enamel rods overhanging dentin. Let no one deceive himself. It requires good sound blows to cut away bone in the vast majority of cases that present in a dental operating room.

The writer believes that the technic of an operation should be affected by considerations on the part of the surgeon for the post-operative conditions. None will disagree with this principle. It is sound surgery. For this reason the author firmly believes that he has a technic to present to the profession that should become as standard generally as it has in his own hands. It is a technic that has revolutionized the practice of exodontia for him in that it has (1) minimized post-operative trauma in many instances, (2) eliminated post-operative trauma in many more cases, (3) afforded relief to his patients from the nervous shock incident to the mallet blows, (4) facilitated and simplified erstwhile difficult cases, and (5) cut down considerably the operative time for the surgeon and the operative ordeal for the patient—all these without the sacrifice of any of the fundamental requirements of sound surgery.

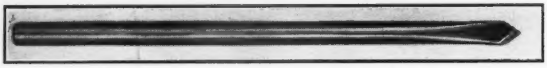
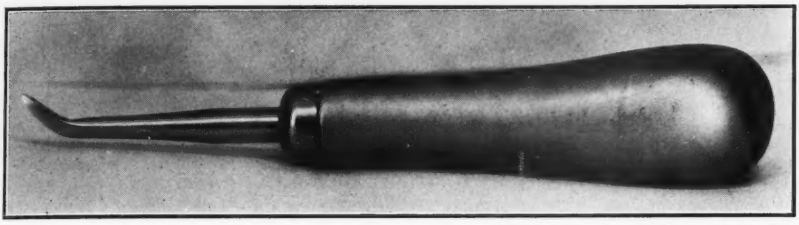


Fig. 1
The author's drill.

That many operators are availing themselves of this technic in their own offices is a matter of ever increasing personal gratification. That it may ever prove to be more popular with the profession at large is the author's earnest wish in the interest of better dentistry.

In practical application there are so many various means for the introduction of the spear drill that it is somewhat difficult to convey to one who has not seen it in use a satisfactory and completely comprehensive conception. In general, the author's idea is to endeavor to approach a root or a tooth through the buccal plate or through the alveolar septum at the point of greatest vantage, creating within the bone a path which will permit of the introduction of a suitable lever to engage the

root. Sometimes a single path is not sufficient. In such cases the operator must make an additional opening in the bone or several openings around the root, weakening the bony investment and permitting a freer delivery. In the author's experience the drill which he has advocated and used for several years serves this purpose remarkably well. A few practical instances of the application of this drill will perhaps bring out more clearly



Exact size of patholever 5½ inches

Fig. 2
The author's patholever.

Where roots are exostosed, the author punctures the buccal plate concentrically so that the subsequent introduction of the patholever at the points of perforation will effect successful delivery. The main point for the reader to bear in mind is what we are endeavoring to accomplish with the drill, the chief aim underlying the use of either mallet-chisel force or hand-chisel pressure; that is, the removal of bone at a strategic point to permit of the introduction of a lever-lifting force. some of the salient points associated with this technic.

In the following roentgenograms the author, in collaboration with Harry J. Field, D.D.S., of Newark, N. J., presents a series of practical cases operated upon according to the technic of the drill preparing a bony path for the patholever. Each case shows pre-operative and post-operative views. In some it is possible to note the opening made by the drill as it engaged the root.

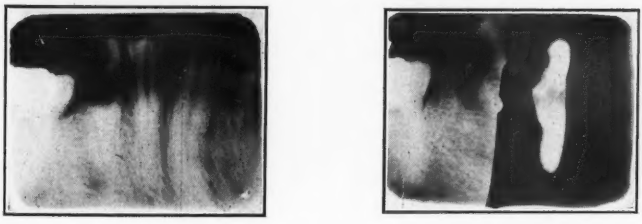


Fig. 3

Practical case of the removal of a very carious bicuspid from the mandible. Attention is directed to the opening in the root midway down from the gingival border. The author's drill was used here to penetrate the buccal plate, after the elevation of the mucoperiosteum, and permitted to engage the root substance. Lever force, using the Field pathfinder, successfully engaged the root for delivery.

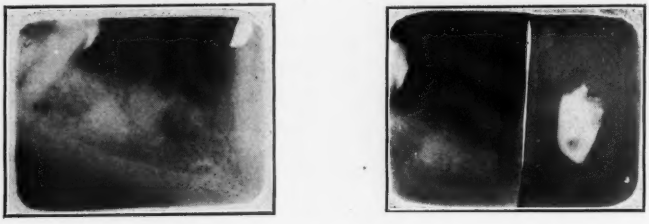


Fig. 4

Practical case showing a badly fractured mandibular molar root. The clinical picture was one of extremely dense bone, making delivery of the root by the avenue prepared with hand-chisel or mallet-chisel force extremely difficult and complicated. Delivery by means of preparing a bony path with the author's drill introduced buccally through the bone and into the root and then passing the slender yet strong patholever into the path was effected quickly and conservatively with entire freedom from post-operative discomfort or operative shock. Note the root with opening clearly shown.

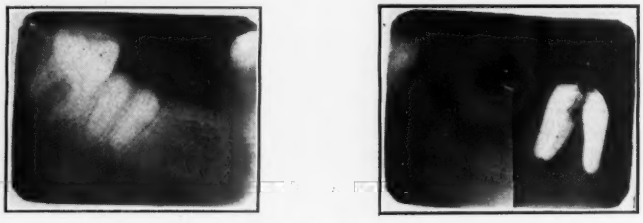


Fig. 5

Practical case of fractured mandibular molar roots: Roentgen-ray exposure was made after the operation for their delivery by means of the author's drill and their elevation with the patholever via the bony path prepared by the drill. The impression of the drill is to be seen in one of the roots. The post-operative film shows a clear alveolus, with conservative bone loss.

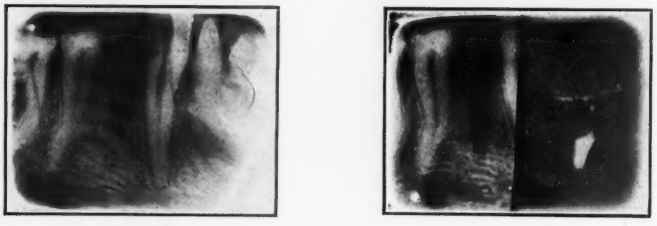


Fig. 6

A deep apical fracture of a mandibular bicuspid retrieved by Dr. Field in less than one minute, an operation which would consume much time and seriously engage the patient's nervous resistance by the usual process of chisel and mallet force.

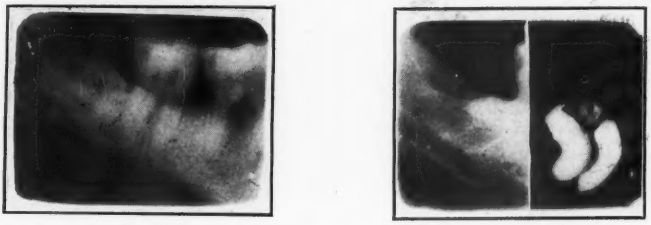


Fig. 7

Practical case illustrating fractured third molar roots with distal apical curvature removed by the use of the author's drill and the introduction of the patholever into the bony path prepared by the drill for the elevation of the roots.

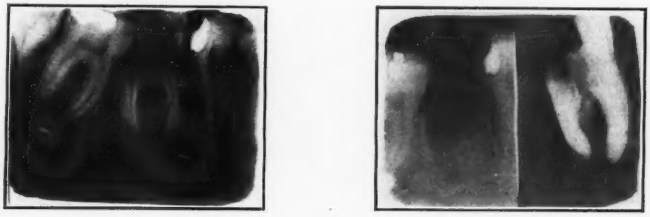


Fig. 8

Practical case of a carious mandibular molar removed with the drill and patholever. Attention is directed to the coronal portion of the molar before the operation. Note the bicuspid leaning toward the molar, making the application of molar forceps difficult and dangerous. The introduction of the author's drill permitted the elevation of each root individually, with practically no injury to surrounding tissues.

Fig. 9

Practical case of partly impacted mandibular molar removed with the author's drill and patholever. The entrance with the drill was made at the mesiobuccal gingival aspect of the third molar. Leverage was effected in an upward and lingual direction. No degree of fulcrum resistance was demanded of the second molar whatsoever. This minimizes post-operative trauma to an amazing degree.

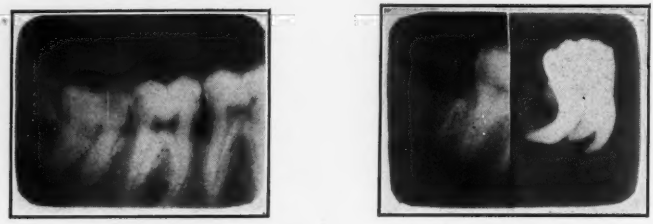


Fig. 10

Practical case of a mandibular third molar which showed a somewhat difficult posterior aspect. The author's drill weakened the bone overlying the distal portion of the crown. Several openings were made in the bone for this purpose. The patholever was helpful here in giving the tooth a forward movement. The drill then prepared a bony path for the patholever buccally, beneath the bifurcation. This permitted the operator to utilize the buccal plate of the mandible as a fulcrum, with the lifting force upward and somewhat lingually.

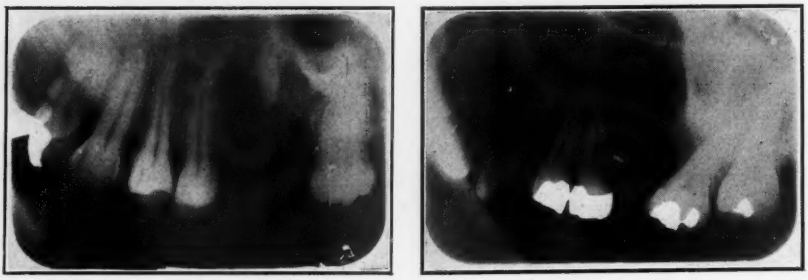


Fig. 11

A pre-operative and post-operative view of a case of a root in the maxillary sinus. Entrance into the sinus was effected by means of the author's drill. Quick penetration with a minimum of contact between bone and drill is here possible. Mallet force is very evidently associated with a certain amount of shock to the patient.

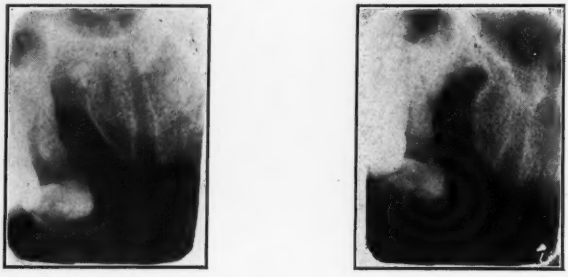


Fig. 12

A pre-operative and a post-operative view of a maxillary cuspid apex fracture. Removal was effected by way of the labial plate. The mucoperiosteum was reflected all the way, and the author's drill introduced in the bone to engage the root slightly. Downward leverage easily delivered the apex.

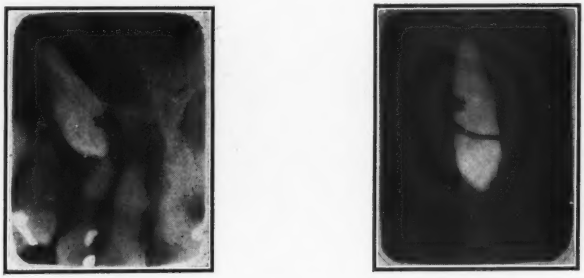
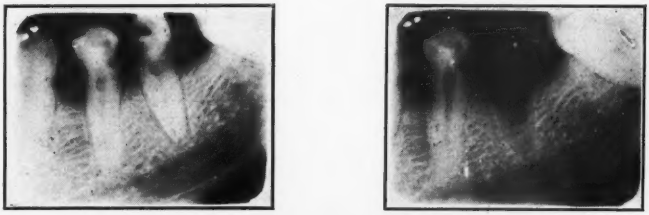
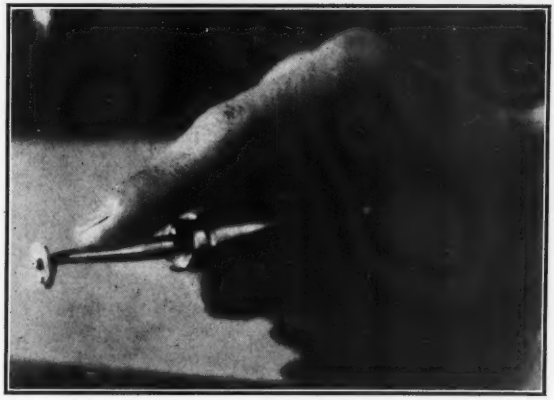


Fig. 13

Case of an impacted maxillary cuspid removed by Dr. Field by means of splitting the crown away from the root and then engaging the root with the drill and patholever, moving the root forward into the space created by the delivery of the crown. The point of entry of the drill into the root is shown clearly.



A B



C

Fig. 14

A—Pre-operative view of a mandibular bicuspid. The coronal portion is very carious and the bony plate buccally and lingually too dense to permit deep forceps engagement.

B—Post-operative view.

C—Photograph showing how these roots frequently come out speared by the patholever, which has been forced through the drill path into the tooth substance.

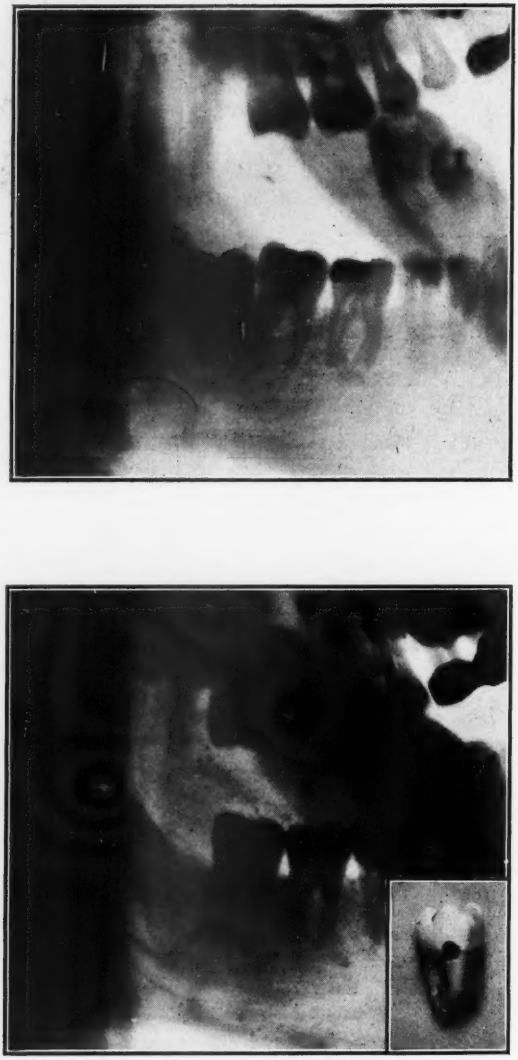


Fig. 15

Showing a case of vertical impaction of a mandibular third molar removed by the author's drill technic. The drill is introduced at the buccogingival angle of the crown at its mesial aspect.

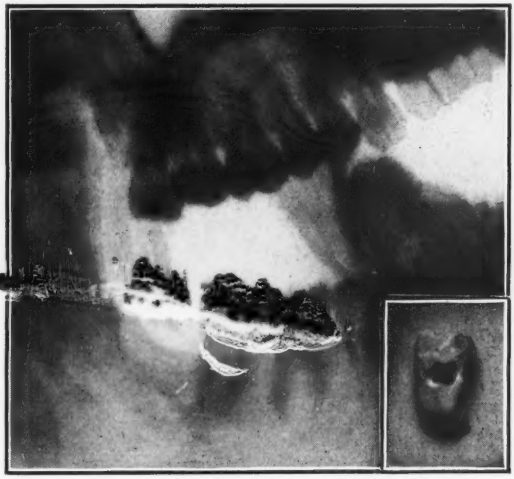


Fig. 16

A vertically impacted mandibular molar, with the crown leaning backward toward the ramus, removed as described in Fig. 15, with the following addition to the technic.

The bone lying distally to the crown in this type of impaction is weakened by puncturing several times with the drill, the openings being made close to each other. A curettage after tooth delivery removes all uneven margins.

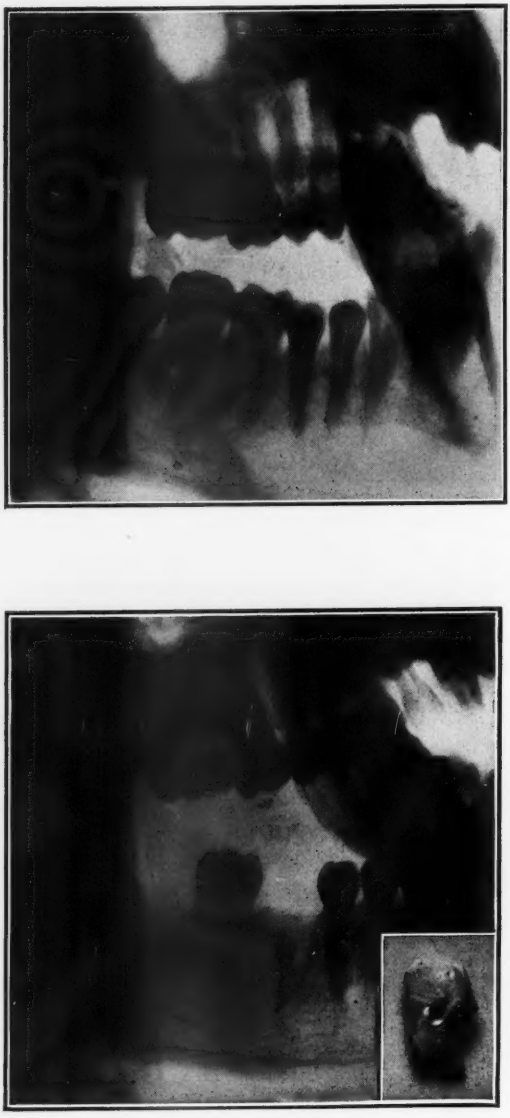


Fig. 17

Case of vertical mandibular impaction of a third molar. The tooth was removed with the drill at the mesiobuccal gingival aspect of crown.

730 Fifth Avenue

A Critical Analysis of Present-Day X-Ray Conditions

By ROBERT M. FISCHER, D.D.S., New York, N. Y.

In making even a casual survey of the dental profession the observer must be impressed by the relative inequality both of interest and of practical execution which exists in the different branches of service constituting the general practice of dentistry. Unless we specialize and thus publicly demonstrate our preference for one type of work over all the others, we sooner or later acquire an unconscious liking for a specific few of the vast number of problems with which we are confronted in our sphere of general practice. The faithful conduct of a practice in which all forms of dentistry are given earnest and competent attention is admittedly an extremely difficult undertaking, and we are not exaggerating when we state that the percentage of dentists who can conscientiously declare that in their practice every type of dental service is rendered with equal interest and skill is startlingly small. Yet the remainder, the vast majority, can scarcely be held culpable, because so many and diverse are the problems confronting them that, although it is their zealous desire to maintain the highest standards in their devotion to their patient's welfare, it is too often a physical and economic impossibility.

Naturally it is impossible even to attempt to compute the percentage of interest shown by each dentist toward full denture prosthesis, periodontia, oral surgery, operative dentistry, etc., but if results are any index of interest displayed, then, indeed, roentgenography ranks near the bottom of the list. And as if it were not sufficient that results are bad because of apparent lack of interest, still more deplorable is the fact that our colleagues know so little about interpretation that there seems to be slight possibility of their ever discovering for themselves that their results are as wretched as they now are.

While we are thus engaged in a frank discussion of one of the most vexing problems in dentistry, it is best that we discard all the mantles of secrecy, indifference and self-satisfaction which enshroud us and look the issue squarely in the eye. There can be no denying that the entire field of dental roentgenography is a very much abused one, chiefly because of its apparent simplicity. One of the popular misconceptions is that any one who can operate a camera can take an x-ray. And why not? Is it not merely a question of pressing a button and obtaining an image on a film? And since an image is invariably produced, the operator is fooled into believing that he has done everything in flawless style. The obvious corollary to this is that, since the technic of the exposure is so simple, interpretation must be correspondingly easy. There can be but one result from this type of rationalization—or, rather, irrationalization—and that result, almost uniformly poor throughout the entire dental profession, now leads us to focus the spotlight upon a situation which may still be helped.

For some reason the mental attitude

of the average practitioner toward the x-ray machine is that it is an expensive but necessary accessory, useful in many respects in his every-day practice but indispensable in the impression that it leaves in the minds of his patients by its mere physical presence, and that the making of a roentgenogram is a disagreeable formality which is scarcely worth the valuable operating time which it consumes. Our complaint is not that there is insufficient primary interest displayed by the dentist toward the x-ray, but that because of the consistently poor results he obtains through faulty technic and lack of proper interpretation his enthusiasm is constantly being dampened. Occasional papers before society meetings by great scholars and scientists are of little value to the dentist, because, no matter how splendid the lecture, its significance is soon lost in the great melange of affairs which constantly occupy the mind of the average man. But if he were once given a proper foundation upon which to build, his progress would be exceedingly rapid and the results astounding. We are not overlooking the fact that roentgenography is a newcomer in the field of dentistry, and, although it has been universally accepted, its full worth in most cases has not been realized.

Let us approach our problem in an orderly fashion. In order to do this, we must start with the mental attitude of the average dentist toward the part played by the x-ray in his practice. During the past quarter of a century the x-ray has come each year to be regarded with increasing respect and even reverence until from an interesting novelty whose possibilities were limitless twenty-five years ago it has matured to a full-grown entity in itself, so well developed and yet so easily controlled that the average dentist should regard it as even more valuable than his electric unit. After all, we could in an emergency use a foot engine, if the electric one was out of commission, and even sharp hand instruments, as some of our best operators do every day in their practice, but without the x-ray we work in total darkness. Indeed, we have no better proof of the utter blackness of such a situation than to x-ray the mouth of any patient whose dentistry was done prior to the days when the x-ray came to be adopted as a daily adjunct to all dental procedure. To describe in detail all the dental deficiencies, to say nothing of evidences of pathology, visible under the x-ray in such a mouth would consume more time and space than at this time are permissible. Our interest at the present centers chiefly upon the x-ray situation and the reasons for its deplorable state.

The writer feels that the time is quite ripe for a thorough and searching investigation into everything which has to do with the x-ray in practice and to ascertain the reasons for the failures which occur daily by the thousands.

Perhaps our progress in most of the other branches of our profession has been so rapid that we have accepted the x-ray as a matter of course and, in addition, as something to act as a favorable psychological agent, without paying sufficient attention to its practical value. How long we shall be able to permit our knowledge of roentgenography to remain stagnant it is diffi-

cult to predict, but it cannot last indefinitely. The laity are only a few jumps behind us. In fact, a large number of men and women who visit their dentist regularly already know considerably more about the higher forms of restorative dentistry than some of our own colleagues in active practice, and they are commencing to manifest more than a passing curiosity about the x-ray. How many dentists can intelligently describe the physics of the Coolidge or the Crookes tube? How many even know the principle of the x-ray? Are all changes in radiolucency visible in a roentgenogram due to pathology? How many dentists engaged in partial or full denture prosthesis insist upon a complete x-ray series before attempting to commence work upon an appliance?

Although it has been written dozens of times and lectured upon hundreds more, the true function of the x-ray in the practice of dentistry still seems to elude a large number of men. Yet how can we include here what its true function is when it would take a very long paper to cover this subject alone? From the very first moment when the patient opens his mouth for examination the x-ray machine becomes a necessity, and it does not matter whether the mouth is seen in the office of an oral surgeon, an orthodontist or a full denture prosthodontist. Recent discoveries by some of the leaders in our profession have proved conclusively that in many instances proximal and even occlusal caries may exist without the slightest chance of detection by any of the ordinary means of exploration. Yet the absolute necessity of the x-ray for pericoronal as well as for periradicular examination is still insufficiently stressed by some of the leaders in the movement for preventive dentistry. There are hundreds of men practicing orthodontia who never take a single film or plate to determine the condition of the alveolar structures whose function and growth they are violently disturbing. They prefer to remain in blissful ignorance of the possible existence of abnormalities such as supernumerary teeth or actual pathology.

Exodontists will frequently reply, when asked whether they x-ray teeth before extraction, "Well, only if they appear difficult." Since when has dentistry been practiced by intuition or as a form of magic? Is there any man living who can, at a glance, tell whether a tooth has long or short, curved or straight, single or multiple roots? Doesn't the question of hypercementosis or the presence of a cyst about a root apex interest every man who extracts teeth, whether he uses local or general anesthesia?

There are prosthodontists who can make a full upper denture stay in place in a mouth which has almost a flat roof. Yet with all their skill are they doing the right thing to make a denture for a patient who may have retained roots, malposed teeth, or possibly even a tumor? Naturally we answer in the negative, but how can we be certain unless the jaws are x-rayed? We may take it for granted that each of our readers knows all or nearly all the uses to which he can put his machine.

Tragic as it may appear, it is nevertheless only too true that the evils which exist and the crimes which are, innocently enough, being committed

daily by dentists are so many in number and variety that this paper must of necessity deal exclusively with the destructive or critical phase of the question. The correction of some of these faulty conditions must be left until the time when we are convinced that the dentist himself is willing to acknowledge some of his foibles and blunders and is eager to rebuild his knowledge and technic from the foundation. Dentists will sit by the hour listening to papers on balanced occlusion, stress breaking, articulation and other allied topics, all of which are intended to make them think along the lines of whole mouth restoration instead of single tooth restoration; yet when it comes to the x-ray, they will repeatedly x-ray single teeth in an effort to make a complete oral diagnosis, neither suspecting nor apparently caring to suspect that the offending member or pathological area may be at a remote distance and could be brought into prominence only if the whole mouth were x-rayed.

Reference is made in the first sentence of this paper to the "general practice of dentistry." We do not by that infer that these lines are addressed solely to general practitioners. Specialists in all branches of the profession, be it oral surgery, orthodontia, periodontia, etc., may find in them quite sufficient to warrant more than passing notice. Slothful and slovenly methods of x-ray technic are found all too frequently even in the offices of those who profess to possess exceptional skill in their specialty.

597 Fifth Avenue

[OPENING INTO ANTRUM]

In the light of present-day knowledge and refined oral surgery technic the practice of drilling into the antrum through a tooth socket and retaining this opening by packing with gauze or gutta-percha until the union of antrum and oral mucosa has produced a permanent opening should be considered obsolete. The number of cases encountered in which, after such operative interference, antrum closure must be achieved by a pedicle flap operation makes this antiquated procedure reprehensible.

—MOLT.

Dental Caries and Pyorrhea*

ANOTHER APPROACH

By F. W. BRODERICK, M.R.C.S., L.R.C.P., L.D.S.

THIRD ARTICLE

The insufficiency of Miller's theory to explain fully the vagaries of the incidence of dental caries, particularly the immunity to this condition that is so common in patients in whom all circumstances would seem to be favorable to its onset, has led to the suggestion that there exists in some persons a constitutional predisposition that would account for their susceptibility and in others some constitutional immunity that would explain its absence. These terms have been used by dentists, hard put for an explanation, without the slightest idea of what they mean in terms of physiology or of the changes in body chemistry that they imply; but the very fact that some additional explanation is required, even though it be expressed in terms as vague as these, demonstrates conclusively not only that fermenting carbohydrate food does not completely fill the bill, but that the clinical experience of all of us points to some underlying condition inherent in the individual which has at least some influence in bringing about or preventing the appearance of caries. When to this is added the circumstance that there would appear to be a direct antagonism between this condition and pyorrhea, that on the appearance of the latter there exists a tendency for the former to diminish, then the possibility of some general bodily state playing some part in the incidence of both conditions becomes suggestive.

It is this idea that I propose to develop in this article, and I believe that I shall be able to demonstrate that the factors that I have indicated in my previous papers play an important part in this constitutional tendency to the one or the other condition, with a corresponding tendency to an immunity to the other.

Talbot has given us two pen-pictures which we can all recognize as being true to life. "Here," he says, "is a slight, delicate girl clerk, without definite signs of systemic disease, yet complaining of frequent headaches and lassitude and obviously presenting a soil in which the tubercle bacillus would flourish. She has a low-grade gingivitis of two or three years' standing, with temporary exacerbations and the appearance of recovery from time to time when persistent and careful local treatment has been given. There is a little yellow tartar on the backs of the lower incisors, two of which are slightly loosened. The x-ray films show a varying degree of absorption of the alveolus, most noticeable in the case of the lower incisors. They are beautiful teeth, with a little sound filling work and no devitalized nerves." He continues: "Here, in striking contrast, is a vigorous man of fifty, with a history of excellent health and athletic pursuits.

* Reprinted from *The Dental Magazine and Oral Topics*, August, 1929.

Only, recently he has complained of occasional dizziness, irritation, insomnia and some precordial discomfort. He has high blood-pressure and arteriosclerosis. His teeth have served him well so far, but there is abundant soft tartar on the lingual aspects of the lower incisors and scattered deposits of darkly stained 'seruminal' tartar below the gum. There exists moderate absorption more marked between certain molars, and two or three deep pockets in these regions."

Talbot gives these as examples of two distinct types of pyorrhea. With his diagnosis in the former instance I distinctly disagree, for reasons that I will discuss in another article, but in the latter I would suppose that there can be no doubt whatever. The point, however, that I use them to illustrate is the obvious difference in constitution between the two individuals, the former presenting a tendency to tuberculosis, the latter to arterial degenerations and heart and kidney disease, with, in each case, a distinctly differing dental picture, whether we accept them both as cases of pyorrhea or not.

The Case of Two Brothers

Bunting has published a comparison of the dental condition of two brothers which well illustrates a constitutional factor in the susceptibility to dental caries. He says: "Two young men, who were brothers and who, although of approximately the same age and living under practically the same environmental conditions, presented very marked differences in their dental health and susceptibility to dental caries. The younger, aged eighteen and a half years, was a large, well-built young man, apparently of the lymphatic type, but actually possessing a highly nervous temperament. He had large bones, and his teeth were large, broad and well formed. The molars and bicuspids presented low cusps which were worn. Upon inquiry it appeared that he had inherited the lymphatic stature of his mother and the nervous temperament of his father. As far as dental caries was concerned, his mouth was entirely free from any apparent effect, and when cultures were taken it was found that there was no evidence of B. acidophilus.

"His brother, aged twenty, was much smaller in stature, of a typical nervous type, while his teeth were manifestly poor in quality, having high interlocking cusps. Although his life conditions, as far as environment was concerned, were identical to those of his brother, he had considerable dental caries, and cultures taken from his mouth were positive to the B. acidophilus."

Diathesis and a Stable Acid Balance

Bearing these dental pictures in mind, I desire to introduce to your notice two others. Ellis, discussing the matter of diathesis as it is affected by difficulties in arriving at a stable acid balance, says: "The eliminative error is seen typically in the heart hospital. Indeed, it was observation of the essentially different type of case which attends heart hospitals from that which attends chest hospitals which gave a valuable clue to the cause of the loss of resistance to tubercle. What forced itself on one's notice was the completely different physical atmosphere which existed in the heart hospital

from that in the sanatorium and the tuberculous dispensary. My own observations have shown how seldom arteriosclerosis and allied diseases were seen in tuberculosis cases. Where the strong, robust, red-faced, muscular type predominated, there heart and renal cases predominate. The typical diseases of acid conditions with eliminative errors are heart disease, certain varieties of arteriosclerosis, and kidney failure. They are open-air persons for preference. They have a robust youth, but their balance tends to be upset as life advances, and they have not the same assurance of health in old age as inspired their aggressive youth. They have good appetites, live well, enjoy life, and become sufferers only when they break down from metabolic accumulations.

"The other type with assimilation errors are predominant in chest hospitals. They are naturally spare of build, narrow-chested, slack of muscle, their joints tending to hyperextension, with insufficient muscle and chest development, and there is a liability to nervous symptoms. They have essentially gastric complexions and are usually of the sallow, anemic type. They are finicky eaters, especially subject to digestive disorders connected with deficient metabolism, with all the dangers which this entails. Their diseases are especially intestinal and pulmonary, and they suffer from inanition. In youth they have a struggle with their environment, but when they succeed in establishing their balance, which generally is somewhat late, they have usually a fine old age. They suffer especially from deficient resistance to certain bacterial invasions, of which tubercle is the most typical. They flower late, but their bloom will last, and, once having acquired dominion over their surroundings, they are able to retain it, since their elimination does not fail with advancing years."

A Decided Similarity

There is a decided similarity in these two last pictures with those sketched by Talbot which makes it possible to correlate them, although the artists had each no thought of the conditions that the other was illustrating. I would suggest also that, thinking along the lines of these papers, Bunting's pictures fall into the scheme, but that must wait, for explanation, to a later date.

Ellis is illustrating a difficulty, inherent or acquired, in maintaining that balance of acid to base in the body on which depends the reaction of the blood, the tendency to an acidosis or an alkalosis. In the one instance there is an error in the eliminative powers, as a result of which there will come about a tendency to an excessive accumulation of metabolic products which will result, sooner or later, in a tendency to an alkalosis. In the other this error is rather in the assimilatory mechanism, which, through a difficulty of procuring sufficient alkali, may also lead to an acidosis.

The interesting point brought out in correlating Talbot's and Ellis's pictures is that in each case there come about differences in the dental conditions as a direct result of the constitutional factors involved. In these circumstances it is surely impossible to conclude that the conditions demonstrated by Talbot can be the result simply and solely of inefficient feeding and insufficient

cleaning, and that the inherent diathesis and constitutional efficiency of the individuals themselves play no part whatsoever in the result.

Three Groups

Ellis believes that all individuals can be divided into three groups according to their ability to regulate the acid base balance of their tissues, the one group in the center having but little or no difficulty in this function. These have tendencies to neither heart nor arterial disease on the one hand nor to chest complaints on the other. On each side of these there exist others who, in a greater or less degree, possess inherent difficulty in the one or the other direction, in the one case having a tendency to an acidosis on much less provocation than the healthy and in the other to an alkalosis in circumstances which would not arise in those more favorable circumstances. Both these classes of individuals gradually fade into the healthy, there existing all grades from the normal to the most inefficient in the one or the other direction.

As a corollary to this it will be obvious that those individuals who have a greater tendency to an alkalosis will be most immune to an acidosis, even under great provocation, and those with the tendency to an acidosis will require enormously increased alkali production to bring about an alkalosis.

An All-Sufficient Explanation

With the visualization of dental conditions that I have put before you, I believe that we have here an explanation of the susceptibility and immunity to caries and pyorrhea which answers all difficult questions, accepting provisionally, as I ask you to do for the present, the antagonism between these two conditions.

A child living upon the edge of an acidosis, as the result of constitutional conditions, will, in the changed circumstances of middle life, have but little difficulty in dealing with an increased assimilation of alkali. Its original liability now becomes an asset, and any excess of alkali will be easily neutralized and a balance attained with increasing ease. On the contrary, an individual who as a child had no difficulty, on account of the ease with which it eliminated excess acid, in escaping the consequences of an acidosis will now be strained to the uttermost by an additional quantity of alkali and may well develop an alkalosis on but slight provocation.

Here is a rational explanation not only of immunity to dental disease as a whole but to the susceptibility to caries, carrying with it an immunity to pyorrhea and an immunity to caries in youth to be followed by a susceptibility to pyorrhea in the later middle years—an explanation, moreover, why it is the patients with the good teeth who suffer from disease of the supporting tissues, whereas in so many instances, if the dentist can preserve the teeth to middle age by careful conservative work, the patient will keep them almost indefinitely.

Unexpected Confirmation

Wilkocks of Bristol, in discussing a paper of mine on this matter, reported that during an examination of old dental charts of his patients he discovered what had appeared to him an almost inexplicable fact, that in those

individuals in whose mouths he had had to insert a large number of fillings in the years gone by, dentures to a very great extent had not subsequently been required and they had retained their own teeth, whereas in those patients in whom years ago fillings had not been required, dentures have since become necessary.

This was a most unexpected confirmation of the matter that I had brought forward, and one for which, I submit, no other explanation can be found.

On what, then, will depend this diathesis or constitutional ability to attain and keep with ease this acid base balance of the blood and tissues? I suggest that each individual possesses his respective constitution, and that, as a result of this, his mouth condition, as a result of his gland make-up, will depend absolutely upon the level at which these function, and that consequently his whole dental history is the result of his endocrin balance.

ENDOCRIN FUNCTION

It must be realized, of course, that endocrin function at any particular time will depend upon a number of circumstances, of which inborn stability and balance will be the most important factors, on the top of which the strains and stresses of modern life will leave their mark. A balance and functional activity at a high level will obviously be enabled to cope with difficulties which will be impossible for others less efficient, and as a result the functional capacity may be lowered by adverse circumstances. The effect of such conditions as bad feeding, all forms of malnutrition, the attacks of exanthematous fevers, or the psychological upsets so common in life will differ in different individuals according to the ability of their endocrin apparatus to stand up against them.

BREEZE AND MRS. MELLANBY

Breeze, criticizing Mrs. Mellanby's suggestions as to the effect of vitamin starvation on the incidence of caries and referring to the dental condition of a large number of children in a Jewish home, of whom 12% of the boys and 16% of the girls had no caries, says: "Many of them have been in school four, six, eight, or even ten years, passing right through their school lives needing no dental attention whatsoever, and side by side with them, under the same roof, subject to the same discipline, as regards artificial cleaning with the brush, under the same diatetic regime, even the very sequence of the diet the same, are found others in whom the one thing one can safely predict at every succeeding inspection is that they will certainly be found candidates for an early sitting in the dental chair." From this experience he argues that the question of diet can have but little effect in causing or preventing tooth decay, other than by a strictly local condition, in contradistinction to Mrs. Mellanby, who would champion the general rather than the local causation. I would submit that both these observers argue wrongly, Breeze in that he is neglecting constitutional factors, the starting-point from which local circumstances are enabled to act—the threshold, so to speak, from which exciting causes are dangerous; Mrs. Mellanby in consid-

ering one, and one only, of the factors concerned in the predisposing causes.

The Ductless Glands

The ductless glands with which we are most familiar divide themselves into two great and antagonistic groups with reference to their action on metabolism, the anabolic and the catabolic, the former presiding over the collection of building material, the latter the utilization and the spending of this when collected. In the first group are placed the parathyroids and the pancreas, on account of their activities in calcium and sugar metabolism, and probably also the anterior pituitary; in the other the thyroid, the posterior pituitary, the adrenal tissue of the suprarenals, and the reproductive glands.

The Periods of Growth

If we divide life into three great periods according to the state of metabolism prevalent at the time—those of growth, of reproduction, and of decay—we see that these are regulated essentially through the different groupings of these glands. In the first those are mainly active which are anabolic in function. An upset, therefore, during this period is most likely to result in a deficiency of building material, which, being for the most part alkalis, will tend to bring about an acidosis and consequently a susceptibility to dental caries. As the question of health depends upon a balance between anabolic and catabolic activity, which during this period should result in a surplus of supplies, it will be seen that either a diminution of anabolic or an increase in catabolic function will have the same result. In the former the supplies will not be forthcoming, and in the latter they will be incorrectly utilized. The increased catabolism may be brought about by excess vitality, as in the overactive nervous child, or such conditions as the acute fevers. In both cases there will result a great increase in acid production.

The Second and Third Periods

In the middle period, growth and development having ceased, the balance between collecting and spending, between anabolism and catabolism, becomes more easy of accomplishment, and upsets in metabolism will be less common. In the later stages of middle life another phase is entered upon, as a result of a gradual diminution of the reproductive urge. There will be a tendency, in modern circumstances, for catabolic activity to be lessened, muscular exertion becomes less acceptable than formerly, and the worries and stresses of life tend so often to increase, with a consequent tendency to an accumulation of alkalis and the production of an alkalosis, whereas as age increases catabolic function will once more tend to predominate with the production of an acidosis once again.

The effect of these changes on the teeth we considered in a previous paper, when we saw that they produced changes in the reaction of the saliva, which reflected the necessary compensations that resulted from the fact that the blood reaction must remain stable. Augmenting the argument brought forward in that article by those produced in this, we get a glimpse of the circumstances on which the predisposing causes of dental conditions pri-

marily rest, on the top of which the exciting causes will be enabled to function. With an easily attained blood balance the exciting causes must be very pronounced indeed to bring about caries, but where this is attained with difficulty, conditions which in the former case would be of no importance whatever become a menace, in addition to which we can appreciate a lowering of efficiency, the result of external circumstances of environment, which will graft an acquired susceptibility on a constitutional immunity.

The Involuntary Nervous System

Let us go into these circumstances of environment a little more deeply and consider just three of the factors of importance to our present discussion—the question of metabolism, of bodily resistance to infection, and the matter of psychological disturbances—the first in that it is probably the most important, the second in that from it have arisen many misapprehensions, and the third in that it is so often overlooked.

To understand what is to follow, some idea of the structure and function of the involuntary nervous system is essential. This part of the general nervous system is composed of two separate and distinct branches, known respectively as the sympathetic and the parasympathetic portions, which taken together make up the vegetative or autonomic nervous system and supply all the involuntary tissues and organs of the body. The former is made up of nerve fibers given off from those sections of the cord which lie between the first dorsal and the last lumbar segments, the latter from fibers from the central nervous system both above and below this, from the third and seventh cranial nerves above and from the sacral nerves below, these together forming a definite system with a definite function.

The essential difference in function between the spinal nerves and those forming the vegetative system lies in the fact that, whereas the former preside over fine, delicate, coordinated movements, the latter are so constituted as to give a widespread instant action to any special stimulus.

Antagonistic Innervation

Now, practically all the involuntary tissue of the body is innervated by both branches of the vegetative nervous system, and in each case this innervation is antagonistic. If the one part stimulates, the other inhibits. Further, the functions of the body are so arranged that those organs which are primarily concerned with the preparation and the storage of material and energy are stimulated by the parasympathetic and inhibited by the sympathetic, while those that utilize this material or dissipate this energy are stimulated by the sympathetic and inhibited by the parasympathetic. Now, we have just noticed some such division between collecting and spending in the consideration of the individual endocrin glands. Together, therefore, these glands and the vegetative nervous system control metabolism. The parathyroids, the pancreas and the anterior pituitary are stimulated into activity by the parasympathetic; the thyroid, the adrenals and the reproductive glands by the sympathetic. In addition to this, however, the two parts of the vegetative nervous system are themselves stimulated by the

hormones of those glands which they control. We get, therefore, a wonderful system, the result of which will be an instant and intensive reaction to any special stimulus.

The result of this double innervation of the involuntary organs and tissues, at the same time a stimulation to activity and an inhibition of that activity, is to bring about a state of tone, resulting in a readiness to react instantly to any stimulus, whether this be to activity or to a diminution of function.

Consequences of Imperfect Balance

If, however, this antagonistic action be not perfectly balanced, there will result not only a chronic state of overaction of one or the other group with a corresponding underaction of the other, but, in addition, a loss of tone so that on the occurrence of any special stimulus the effect will be either excessive action of the one part or diminished action of the other.

This loss of balance may arise from some functional deficiency in the vegetative nervous system itself or may result from some malfunction of the endocrin glands which regulate and interact with it. And these deficiencies either may be the effect of some constitutional, inherent disability or may be brought about by some temporary accidental circumstance.

Metabolism

Now, the whole question of metabolism, on which depend the reaction of the saliva and those conditions which we have seen tend to bring about immunity or susceptibility to caries or pyorrhea, is governed by this complicated piece of machinery—the vegetative nervous system and the endocrin apparatus. The building up of the reserves from the food supply, through the digestive processes, is controlled by the parasympathetic, acting in conjunction with the parathyroid and the pancreas. The utilization of the material thus collected and its conversion from potential into kinetic energy are effected through the sympathetic and its coordinated glands.

It will be understood, therefore, that the assimilation and utilization of alkalis, on which, from our present point of view, so much depends, will be intimately associated with the functioning of the endocrin vegetative mechanism, as will also the production of acid to balance this alkali, and any circumstance which will tend to upset a perfect working between its two parts will be reflected in tendencies to change in the acid base balance of the blood and through this in the reaction of the saliva, these said circumstances being some congenital instability, some vitamin deficiency, mal-hygiene, infections, or any of the multitudinous conditions which militate against perfect health.

It is here, and I believe here only, that the question of diet becomes an important factor in the prevention of the production of dental disease, the discussion of which I propose to leave until a later date.

Defensive Mechanism of the Body

Passing now to the matter of the defensive mechanism of the body, which is intimately connected with these considerations, we find that as the

result of an infection the catabolic sympathetic portion of the endocrin vegetative system is stimulated to excess activity, and that for a time all the activities of the body under its control become dominant and those regulated by the anabolic parasympathetic portion are overshadowed. Thus are mobilized the powers for a rapid destruction of the invading organism, and all the energies of the body are poured into this channel. The ability of the patient to bring about a rapid and successful mobilization will depend upon the tone of the apparatus as a whole. If, by chance, the sympathetic catabolic portion be normally deficient owing to parasympathetic dominance, there will be, so to speak, an amount of slack to take up first before the stimulus of the infection is enabled to exert its full force upon those parts of the body regulated by that part, and these individuals will start their defense by that much at a disadvantage.

If the acute infection be rapidly overcome, this is all that is required, and, although the reserves slowly built up by the anabolic system may be seriously diminished by the excess catabolism and as a consequence a tendency to acidosis develop, these will soon be replaced on recovery. If, however, there happens to be a long fight between the infecting organism and the patient, the depletion of these reserves may play an important part in the recovery or otherwise of the sick man. It is essential, therefore, in protracted cases, that at some time or another the temporary eclipse of the parasympathetic anabolic portion of the defensive mechanism again become functional so as to keep up the supply of munitions consumed at so great a rate by the catabolic portion. If this does not happen, there will occur a deficiency of such constituents as calcium and leucocytes, which play an essential part in resistance.

Chronic Infection

Closely allied to this condition is the matter of chronic infection. Here the same principles hold good in a lesser degree, in that, the infecting organism being one of less virulence, the original stimulation of the sympathetic tends to be less marked. Consequently there is less opportunity for a rapid, severe and final fight and an extermination of the invader. As a result, then, of a long-continued, indeterminate warfare, in which victory goes to neither side, there will be a tendency after a time for calcium salts to run low, with a consequent tendency to an acidosis and dental caries.

Psychological Upsets

Intimately related to this question of bodily defense is the last of the three factors to which I have referred, viz., the psychological upsets, which I believe to play a great part in the production of both general and dental disease.

In a similar manner to the stimulation of the sympathetic portion of the vegetative nervous system by an infection we have a stimulation by an emotion and, for the self-same reason, that of the preservation of the individual from injury, and this is brought about in the same manner. As a result of this stimulation, the calling into activity of all the catabolic functions and the inhibition of the anabolic, there comes about a preparation of the body

for great muscular activity; the normal reaction to the motion of fear being flight, to that of anger being fight, all and every function of the body is stimulated or inhibited to help the animal to this end. The effect of this is to place him in a more advantageous position to deal with the object exciting that emotion, according to the habits of the creature affected. If, as in the jungle world, the prepared-for exertion materializes, this stimulation is to the unfettered advantage of the animal from the point of view of its preservation. If, however, as in the civilized being, when fear cannot be followed by flight or anger by fight, there results no activity to use up the products so poured into the blood, disadvantages are apt to follow.

Here we have an example of that mal-adaptation to environment that I mentioned in a previous paper as a cause of disease, in that, although man is subject to the same emotions as the uncivilized creature and the wild animal, with the same bodily reactions thereto, he is so often prevented by his circumstances from reacting to them in the manner in which nature intended him to react.

Considering this matter now simply as it relates to dental conditions, through upsets in the acid base equilibrium of the blood, we see that one of the effects of adrenal stimulation brought about through the sympathetic will be an increase in blood alkali mobilized from the body store. The reason for this is to have a supply to balance any excessive quantity of acid formed as a result of muscular exertion and fatigue. When this is so balanced, no harm results, but if the additional acid is not forthcoming, the increased alkali becomes a liability. For the same reason, and also as the result of increased blood adrenalin, there occurs a dilatation of the smaller bronchi, which, by allowing an overventilation of the lungs, washes out from the blood an additional quantity of CO_2. This, being an acid gas, augments the tendency to excessive alkali and, although an advantage if extra exertion can be brought about, becomes an additional liability if it cannot.

Both these effects will tend to bring about a tendency to an alkalosis if the acid production is not increased to balance them, and, in the compensation of this, circumstances will become favorable to a deposition of seruminal tartar, which I believe to be the immediate cause of pyorrhea.

If we accept worry as being the civilized equivalent of jungle fear, differing only by the fact that in the latter case the emotion is usually one great stimulation to action, whereas the former consists of many and frequently recurring smaller stimulations, we can see the whole train of circumstances leading to the well-recognized disabilities which arise therefrom. In the first place the overstimulated adrenal, resulting in an excess of adrenalin in the blood, will tend to produce the degenerative diseases which we realize arise from worry, and in the second the constantly recurring stimuli, giving no time for recovery of the gland between times, may lead to a fatigue of the secreting tissue and an underaction. In this latter case the assimilation of alkalis being interfered with and the production of acid remaining normal, there will occur a tendency to an

acidosis and the opposite sequelae, caries rather than pyorrhea.

This paper is an attempt to give, in the limited space allowed to me, a reasonable explanation of the constitutional predisposition to either caries or pyorrhea, and it will be seen that all the matters fall into place with the theories as to the etiology of these conditions that I have placed before the dental profession from time to time, and which are summarized in my book *Dental Medicine*. I submit that, looked at in this manner, the whole explanation is reasonable and satisfactory, and that it explains the whole circumstances without the hiatuses that other theories leave.

(To be continued)

[THE DUTY OF THE DENTIST]

As the medical man does not know so much about stomatology, there is a constant tendency on the part of his profession to minimize the trouble caused to the human mechanism by dental disease and other disease-producing pathologic conditions of the mouth. This places an added duty on the dentist, and he must find infection, if possible, as a lawyer would say, "on his own motion." The patient and the physician should be informed by the dentist of the diseased condition. It becomes his duty to educate the medical coworkers. They must be encouraged to be on the lookout for oral infection and to weigh and consider it in the rightful proportions.

—STOREY.

Nutrition

Fifth Article

(*Final*)

This is a continuation of the summary of a series of lectures by Sherman L. Davis, Ph.D., delivered before a special class of the First District Dental Society, New York, during the week of May 6, 1929.

Some Food Habits

The food habits of the American people are such that there is no likelihood that the quantity of the so-called storage foods in the diet will fall short. In this country we get such a wide range of food that it is not likely to be albumens, which supply the amino-acids necessary for growth and nutrition, that will be deficient, but there is danger that in taking our albumens we shall not take a sufficient quantity of dairy products, in which the albumens are of a very high order.

There is an opinion that sugar is an excellent food because it produces energy rapidly, and that we should use more of it. It does supply energy rapidly, but it does nothing to build up the body tissues. We use more than 105 pounds of sugar per person per year against a physiological requirement of not more than 30 pounds. The health of both our bony and our soft tissues would be better if we did not use so much sugar.

There is nothing much to be said about the fats.

Because we satisfy our energy requirements too much on the storage foods, we do not use a sufficient quantity of the accessory food substances which make possible the health of the nervous system. The hope for a vigorous adulthood and a high degree of resistance to the insidious diseases which are characteristic of middle age lies in feeding to the child during its growing period a liberal quantity of foods of good quality, rich in the accessory food substances.

We have no reliable method of determining just how much of the accessory food substances are necessary to protect the body. The best we can do is to reduce the quantity of one or more of these substances until the animal becomes susceptible to a disease and then experiment to find out how little of the substance which has been reduced, perhaps Vitamin A, will stop that disease. This method is expensive, time-consuming and not very reliable, and for that reason we have no very reliable data upon this phase of our work.

How much cod-liver oil should a person take? I cannot answer that, but I should say that from the sixth year to the close of life, during the winter months, one might take a teaspoonful twice a day without danger of saturation. McCollum and Simmonds, starting with rats in a condition where disorders of the eye developed, gave those rats 4% of their diet as cod-liver oil, and even with this liberal allowance it required a period of six weeks for the animals to reach the point of saturation.

A great deal of emphasis has been laid upon Vitamin D, and I believe this to be correct, but from the point of view of longevity Vitamins A, B

and C are vastly more important, because it is to the action of these vitamins that we owe the orderly procedure of the great chemical processes of the vital organs.

If an animal is fed upon less than the adequate amount of vitamins, his body ceases to grow. If the shortage of vitamins is great, not only will he cease to grow but the tissues will be invaded. If the mineral salts are insufficient in his food, not only will he cease to grow but the body will become deformed. That kind of deformity is usually beyond repair.

Under the conditions of purchasing food in this country it is quite likely that the diet will be deficient in mineral salts, especially calcium, and phosphoric acid. Phosphoric acid is just as essential to the nutrition of the body as is calcium. These make a temporary combination with glucose, and it is this temporary combination which makes it possible for the muscles to burn sugar and prevent nutritional diabetes. It is essential to the working functions of the body cells and the assimilation of fats. It combines with the fats and so alters their character as to make it possible for them to pass through the intestinal wall and be resynthesized into another form.

MINERALS THAT MAINTAIN THE ALKALIN RESERVE

Sodium chlorid appears to have no other function in the body than to maintain the concentration of the liquids in the body and the process of osmosis. The body maintains a practically constant concentration of fluid in its cells. A person who weighs about 150 pounds has about 100 grams of sodium chlorid in his body. If he ceases to take sodium chlorid in his food, he will excrete about 15 grams in ten days and then will not excrete any more. Sodium and chlorin are of about equal strength from a chemical standpoint, one as an alkali producer and the other as an acid producer, but the combination of the two in the form of sodium chlorid seems to have only the function of maintaining osmosis. In the blood plasma there are about 27 parts of sodium to one of potassium, but that does not mean that potassium is not very important. It assists in carrying on the great chemical functions in the muscles and the vital organs.

The great problem in the body is to be able to neutralize the effect of injudicious eating in such way that the alkalin reserve of the body can be maintained. That reserve is made up largely of the sodium bicarbonate and potassium bicarbonate present. In this combination the sodium is a strong base and the carbonic acid is weak. The safety of the nutrition of the tissues and of the blood depends upon this alkalin reserve. No person can live when the reserve of the tissues changes much from a range of 7.2 to 7.4.

If the body is attacked by an infectious disease which tends to lower the alkalin reserve, the body immediately begins to establish a defensive mechanism through that alkalin reserve by conserving the sodium and potassium to neutralize the acids. Infectious diseases produce acids which must be neutralized. The body will not part with its sodium and potassium, but it begins to manufacture ammonia out of the tissues, especially the muscle tissues, and

the liver takes the ammonia out of the amino-acid and puts it into a form in which it can be excreted through the urine.

In the course of this work nature performs another wonderful function. It takes three atoms of sodium to neutralize one of phosphoric acid. The kidneys take out one atom of sodium and one atom of hydrogen, and the other atom of sodium is sent back into the circulation to maintain the alkalin reserve. If the kidneys are diseased in such way as to make this impossible, there is danger of acidosis.

Erosion of the Teeth

While I have been here I have examined some cases of erosion of the enamel, and as a result of long experience I could guess that the saliva had a hydrogen-ion content of about 4 as against 7 for neutral. If you clean a tooth and place it in water and then acidify the water to a hydrogen-ion concentration of from 3 to 4, the cement substance will be dissolved out from between the enamel rods. The patients we saw this morning will continue to suffer from erosion until they change their diets.

Acid or Alkalin Saliva

I have examined 2600 persons in two years and found only one with an alkalin saliva. Physiologically an alkalin saliva is normal, but in actual practice the saliva is usually acid because nature is holding back the fixed bases to maintain the alkalin reserve in the tissues and prevent acidosis. The yolk of eggs, cereals, meats, most of the flesh foods are acid, and if we satisfy our energy requirements upon these, the saliva will remain acid. The saliva can be brought to an alkalin condition by eating enough of the foods which are rich in the fixed bases. If you make a careful examination of, say, fifty articles of food, fruits, vegetables, muscle meats and starches, you will find that the proportion of bases to acids will run about as follows: bases 80 parts, acids 20. That seems to be a well balanced diet.

When the diet has these proportions, the saliva will be neutral or alkalin in reaction. Cause one of these patients who has an actively acid saliva to eat six or eight oranges and in two hours you will find the saliva alkalin, but that condition will last only a short time.

If we expect to prevent erosion, we must use foods which contain liberal proportions of the fixed bases. People in general will not do this. When those who are suffering from erosion come to us, we suggest a diet with the proper balance and supplement it by giving them 15 grains of calcium carbonate in three- to five-grain doses. The carbonic acid is eliminated by the lungs, and the calcium goes into the blood stream. Ten days of such treatment will usually stop erosion.

Some of the foods which are rich in the fixed bases and the number of parts of alkalin residue, by weight, per 1,000 parts of food are as follows: carrots 102 parts, lettuce 76 parts, tomatoes 69 parts, spinach 67 parts, cereals 93 parts. All of these foods tend to keep up the alkalin reserve and maintain an alkalin saliva.

Eggs contain about nine parts of potential sulphuric acid and some phosphoric acid. Muscle meats contain

about five parts of potential sulphuric acid. Sulphuric acid is a strong acid and draws heavily upon the alkalin reserve of the body, because it requires a strong base to neutralize it.

What is a balanced diet? Physiologically speaking, it is about two ounces of good protein each day, 50 grams of good fat, 250 grams of starch or sugar obtained from natural food substances, and an adequate amount of vegetables to maintain the alkalin reserve. What quantity of vegetables is required? An orange or two for breakfast and sometime during the day at least one good salad of fresh vegetables, of which one should not eat only a forkful but liberally, because the salad vegetables are richer in the alkalis than meat is in acids. Eat the salad first and the meat afterward, and perhaps you will not want so much meat, if you want any. These salad vegetables contribute greatly to the nutrition of the body.

REPLIES TO QUESTIONS

(At this point in his talk the speaker was asked a series of questions, and answers to some of them seem to be worth giving here.)

The soft tissues in the mouth reflect in an easily understandable and specific way some of the health conditions in the alimentary tract. The results of a sour stomach or prolonged indigestion will show in the condition of the gum tissue. Consequences of constipation will certainly show. We have studied 93 cases of gum disease; our results seem to indicate that there are two types of this disease, and one of them is nutritional in character. In treatment of this form of gum disease the first point of attack is the alimentary canal, particularly the large bowel. Nothing else will undermine more quickly the health of the soft tissues than the inability of the bowel to empty itself. Destruction of the alveolar process may come from another cause, and it may be that the mineral salts in this are taken up to help maintain the alkalin reserve of the body when the food is not such as to maintain it without calling upon the storage of mineral salts in the bones.

Should one eat a protein and a starch at the same time? The chemical processes that digest starch are different from those that digest protein. If these two kinds of food are mixed together, it will take longer for them to leave the stomach than for either of them to leave alone. If the individual is healthy, the consequences of this may not be noticeable. Fat will leave the stomach in about four hours, but fat and protein together will require from thirty to forty per cent longer.

Is there enough common salt in food to make the use of salt in cooking unnecessary? Physiologically, yes; but, practically, no. Vegetables are rich in potassium and poor in salt, and the animal that satisfies his body requirements on potassium very quickly loses his appetite. The person who is using a lot of vegetables should, therefore, have some salt used in the cooking.

The Psychology of Dental Office Furnishings

By CARLETON CLEVELAND, D.D.S., Highland Park, Ill.

Considerable evidence could be gathered to show that immediate surroundings have their effect upon the mental state of human beings, and that the mental condition in turn has its effect upon the physical well-being of the human creature. With this in mind architects, interior decorators and landscape-gardeners have put forth every effort to improve the surroundings of humanity. The business office and the office of the professional man, including that of the physician and of the dentist, also have come in for their share of "smartening up."

The time has long since passed when the populace was satisfied with schools in hovels, churches in shacks, and court-houses in ramshackled buildings. The public does not look with favor upon a bank located in a tumbled-down structure or a hotel in a rickety fire-trap or the professional office in store premises.

True, there are cases where a dentist is forced to occupy such premises because of the fact that nothing better is to be had in the town. If such is the case, then the location of his office will not in any way interfere with the building up of a satisfactory practice. But in an up-and-coming town the dental practitioner with an eye to business will seek out the best premises that his bank account and his sense of the fitness of things will allow.

Strange as it may seem, one's ability is judged in accordance with one's ability to put on the "front." Take the case of a physician, for instance. The matter of his schooling and training, the number of degrees he possesses, the years of experience standing to his credit, all are important so far as being able to serve the public is concerned, but they are not so seriously looked into by the laity. It is the style and type of car standing in front of his home or office that spells "successful physician" to the general public. And so a dental practitioner is many times falsely judged by his office equipment and reception-room furnishings.

Dental services are more costly today than a decade or so ago. The dentist has had to "raise his rates" to correspond with the steady increase in the cost of living. The public, because it is obliged to pay more, somehow gets the idea that it has a right to expect more. Therefore, with all the betterment in home surroundings and beautified stores and shops, people naturally look for improvement in the offices of the physician and of the dentist.

Above all, the equipment in a dental office should be modern and efficient. A patient coming to the dental office for relief after having suffered for hours does not relish the added mental torture caused by an engine that is noisy, runs unevenly, jerks, and perhaps stops altogether every now and then. Even the gurgles and chokes of a clogged-up fountain cuspidor are trying to the one who comes to the operating chair in a nerve-shattered state. Modern dental equipment which is al-

ways kept in proper working order is a godsend to the suffering patient. Its use by the progressive dental practitioner will prove a business-builder.

Color, too, has its effect upon the patient. We are living in an age when much attention is given to working out proper color schemes for the home. This color idea can be carried out also in the furnishing of the dental office. If a happy and harmonious color scheme can be worked out, then many other defects in the furnishings of a room will not be noticed.

For years white has been the outstanding color where the thought of asepsis was desired. To be sure, whitened walls will reflect more light on a given field, which is an important item in the operating room. Yet will not a wall enameled in a soft tone of tan or deep cream or ivory reflect enough light when the ease and comfort of the patient are taken into consideration? White gives one the impression of snow—cold, bleakness. So long has it been associated with hospitals that it gives rise to fear—thoughts of distress and pain. Have you ever stepped into a hospital operating room to witness an operation upon some close friend or member of your family? Do you recall the little gasp in your breath as you entered, a sort of jerk in your chest and throat? Doubtless many patients experience similar feelings on entering the dental operating room. Everything should therefore be done to make the dental patient's visit as easy as possible, so that he will be glad to come again when the occasion arises.

Much can be done to allay fear, anxiety and mental distress by ushering the sufferer into a peaceful, harmonious reception room. Here is where one's sense of color can best be exercised. Walls and floor covering should harmonize. They need not be of the same color, but they should not clash. The floor, as a rule, should be darker than the walls, and the furnishings of a shape and color to harmonize with one another and with the walls and the floor. A bit of bright color may be introduced by way of pictures or some little accessory, but large areas of bright colors are irritating. Chairs should be of the restful kind, and the magazines on the table of recent issue.

An array of diplomas is not so interesting to the layman as one might suppose. A patient is glad to know that the dentist whom he is patronizing has been graduated from an accredited school, but beyond that he is not much interested. Pictures of quiet, peaceful scenes are far more interesting and restful than most diplomas or pictures of graduating classes. Farm scenes of cattle and sheep grazing in open spaces or woodland scenes are always pleasing to the eye and will have a more soothing effect on the nervous patient than a line of diplomas or pictures of hospital scenes or a stampede of horses or a prairie on fire. While pictures such as these may be reproductions of masterpieces of art, they are not at all fitting for the walls of the dental reception room.

The same rule applies to magazines that grace the reception-room table. Many patients find it difficult enough to summon up the required courage to visit the dentist without having the ordeal pictured or graphically described in the reception-room literature.

These are just a few of the things

that should be given some consideration by the dentist who wishes to make things easier and more comfortable for his patients. And it is not all for the patients that he will be doing these things. He himself will profit, not only in an added number of patients but also in finding his work easier, since each patient coming to the operating chair will come in a relaxed state of mind with less fear and less nervous anxiety.

708 West Park Avenue.

Federation Dentaire Internationale Prize Competition

In the March (1929) issue of THE DENTAL DIGEST the Scientific Commission of the Fédération Dentaire Internationale announced the offering of a prize of a gold medal and one thousand dollars for research work in root-canal treatment to be awarded at the next International Congress at Paris in 1931.

In connection with this the following notice has been received as this number goes to press:

"According to the order of the President of the Scientific Commission, Dr. B. Gottlieb, Vienna, a resolution was made at the annual meeting of the F. D. I. to decide upon a further generally accepted clarification of the methods of proof of root-canal treatment on which we all can depend. To obtain this, it was decided to postpone the date of the prize competition until after the International Congress at Paris in 1931. Several prominent authorities on this subject will be invited to report on this question. On the basis of these reports a definite control method and the definite date of the prize competition will be decided."

A Method of Setting a Fractured Mandible

By J. A. HEIDBRINK, D.D.S., Minneapolis, Minn.

The immediate considerations in setting a fractured mandible are about as follows:

(1) The fragments must be so firmly fixed that they cannot move during the time required for healing.

(2) The fragments must be so placed that when healing is complete the occlusion will be good, if teeth are present which can occlude, or the line of the jaw will be good so that dentures can be made.

(3) The patient should be able to take the food necessary to maintain his health and strength.

(4) The patient should be free from danger as the result of vomiting, sneezing or coughing while the appliances are in position.

(5) The patient should be able to keep his mouth clean.

(6) The patient should be as free as possible to use the mandible in mastication and speech, so that he will not be shut off from business and social activities.

The possibility of attaining all these ends depends very largely upon the number of teeth present, the position of the teeth in the mandible with regard to the fracture or fractures, and whether or not these teeth are firmly supported by the tissues. If the teeth are numerous, well placed with regard to the fractures and firm, most of all of these ends can be obtained by the form of splint to be described. If the teeth are few or badly placed in the fragments or loose, this form of splint cannot be used and some of the ends cannot be attained.

The most popular methods of setting fractured mandibles are by wiring the mandibular teeth to the maxillary teeth or by a splint or bandage which fixes the mandible immovably against the maxilla. While these methods may secure union in a desirable position, they incapacitate the patient in business and social ways for several weeks, they more or less disfigure him during that time, and they sometimes make it necessary to extract the mandibular incisors to permit feeding and to avoid the very real danger of choking from vomiting or coughing, with perhaps fatal consequences. With such fixation the mouth cannot be kept clean, and this must become very unpleasant to people who are careful of their toilet. The taking of only liquid food over so long a period becomes very tiresome.

When there are one or two firm teeth in each segment of the fractured mandible, a very satisfactory form of splint can be made by banding these teeth and soldering two arch bars to the bands, one bar on the lingual side and one on the buccal. This avoids many of the disagreeable consequences which are almost sure to follow fixing of the mandible firmly against the maxilla.

The first step in the technic of this method of setting a fractured mandible is to employ a thin safe-side disc to remove the contact points of the teeth which are to be banded and then to

take wire measures at the widest part of the teeth in the usual way.

An impression is then taken of each jaw in modeling compound in a shallow tray. The compound should be just deep enough in the tray to take impressions of the crowns, and there should be no excess material. Care must be used to see that the compound is not allowed to get too hard about the teeth or it may grip them and cause pain when the impressions are removed. These impressions may be poured in any good artificial stone.

If, as is usually the case, the fragments of the fractured mandible are loose or displaced by impression taking in such way that the teeth of the mandibular cast will not articulate with the teeth in the maxillary cast, saw the mandibular cast entirely through at each point of fracture and occlude the teeth of the mandibular cast to the teeth of the maxillary cast, referring to the patient's mouth to see that the relations are about correct. Wax the fragments of the mandibular cast together and mount the two casts on an articulator.

Make the bands of 22-K gold, 36 gauge, to fit the teeth on the cast. They should not fit the teeth close enough to cause difficulty in setting them. When they have been fitted to the teeth on the cast, they can be tried in the patient's mouth and then replaced on the cast.

One arch bar is then bent until it lies in contact with the buccal sides of all the bands, and a similar bar is bent until it lies in contact with the lingual sides of all the bands. The bars are then soldered to the bands.

The setting of this appliance is made very much less painful to the patient and easier for the operator by nerve-blocking the side of the mandible on which the fracture is located. If there are fractures on both sides, both sides may be blocked.

The results of the use of this form of splint have been very satisfactory for patients who have a sufficient number of firm teeth in the mandible to make it possible. It gives the patient immediate comfort by preventing crepitation. The patient is able to use the mouth at once in speech and the mastication of food, the amount of masticating force he can exert depending somewhat on the number of teeth banded and other characteristics of the fracture. The disfigurement which results from most other forms of splint and always from bandages is avoided, a fact which is very important to many people in business and social life. With a little care and patience the mouth and teeth can be kept clean and comfortable.

616 Donaldson Building.

Hospitalization of Patients

By C. MAYNARD WOODWARD, D.D.S., Pasadena, Calif.

There has been considerable criticism in recent issues of the dental magazines of the practice of hospitalizing dental surgical cases. The writers of these criticisms doubtless are well meaning, but in a measure their remarks are ill advised. True, the hospital is not the place for the simple extraction of one tooth unless the operator's office is at the hospital and the patient is allowed to leave after the operation, but there are many, many cases which are much more safely and comfortably operated upon at the hospital, where the patient may have competent post-operative and, if necessary, pre-operative care and diagnosis.

The cases in which hospitalization is indicated are full mouth surgery, deep-seated impactions, multiple excementosed root extractions, acute abscesses bordering on septicemia, acute osteomyelitis, and extensive surgery on pampered and neurotic individuals.

In our office we may follow out every dictate of modern surgery and asepsis and dismiss the patient with minute instructions as to how to care for himself. The minute he walks out the door he is out of our control and observation, but our responsibility remains until he has completely recovered. What assurance have we that the chain of asepsis we so carefully started will be kept up? When the patient returns a few days later with severe pain, a high temperature and a badly swollen face, we feel sure that our instructions have been disobeyed, but we have no proof. Who suffers for the neglect? Both the patient and the dentist. We have many times been called to the home of a patient who was suffering acutely with post-operative complications and found the patient on a dirty bed in a draft, with a filthy rag around his face, using a mouth-wash not prescribed from a dirty glass, and making the air blue with his remarks about how poorly he has been treated. He *was* poorly treated. If he had been sent to a hospital, he would have been properly treated, and if any inevitable complication had arisen, its onset would have been foretold by the chart reading, and measures would have been taken to minimize or prevent it.

In known poor surgical risks much can be done in a hospital to lessen the risk by pre-operative care. Also, the routine physical examination will often bring out factors which it would be impossible to find at the office, factors which might have a decided bearing on the prognosis of the case. For instance, pernicious and secondary anemias are not always apparent to the casual observer, but severe anemias make for poor operative risks from any standpoint. Diabetes and nephritis are two other maladies which are not easily diagnosed by physical observation, but which minimize the chances for an uneventful operation and recovery. If your patient goes into a coma, or if he has no comeback due to anemia, both you and the patient are in a position that it is hard to laugh off when the

operation has already been performed and it is too late to do anything about it. And just such occasions do occur more frequently than one likes to think.

Most of the criticism of taking patients to hospitals comes from men in general practice. Even the busy man in general work does not see enough surgery to be in a position to make an authoritative statement on the subject. Also, he may never know the results of his handiwork. All he knows is that the patient does not come back for his restorative work. Perhaps when the reaction sets in a physician is called, with a consequent loss in prestige on the part of the dentist.

We must admit that hospital bills are large, and that many patients find them hard to pay, but dental bills also are high. However, patients are willing to pay dental bills if they are convinced that they are necessary.

We have had the opportunity of observing the results of a great many cases of oral surgery both in the hospital and in the office, and it is amazing how much better the prognosis is after the proper hospitalization of an extensive case. There would be much less hue and cry against the multiple extraction of teeth if it was always done with proper pre-operative care, hospital surgical routine under general anesthetic (nitrous oxid and oxygen and premedication), and hospital post-operative care. In cases treated thus the lack of shock, post-operative pain and infection is amazing. In fact, we are so assured that such a procedure is the proper one that we advise patients who cannot afford the hospital to go to the hospital regardless, and we reduce our fees to the extent of the hospital bill.

We feel that the proper and judicial use of the hospital is a very great factor of safety for both the patient and the operator. We have explained why it is better for the patient—and now for our side of the story. A dentist is not supposed to permit a death in his office. Such a thing is about the worst calamity that could happen—at least, so it seems to the dentist. He is not even supposed to allow a serious condition, such as severe shock, diabetic coma or an attack of apoplexy, to develop in the patient while in the office. Such an occurrence is front-page news and makes very poor advertising for the unfortunate owner of the office.

I will tell you a little story from life. The incident occurred in our office. A patient presented with two teeth, rather difficult molars, to be extracted. She insisted on a general anesthetic. It was quite evident that she was a poor risk, being an advanced tubercular case and giving a report of hemorrhages in her history. She had had severe pain from her teeth, but they were not hurting her at that time. She was feeling fairly well temporarily and wanted the teeth removed before they began to ache again. We told her that she was a poor anesthetic risk and advised her to go to the hospital or take a local anesthetic in the office. She said that she would rather die than "feel that needle," but that she could not afford to go to the hospital, and, besides, she wanted them out that day. We argued with her for a little while, but finally gave in and told her that we would do it at the office. However, by that time she had decided not to have it done after all. She walked out and we never saw her again. Her sister told us the sequel some time later.

It seems that the patient went to the hospital for treatment two weeks after being in our office and while there decided to have the teeth extracted. A pulmonary hemorrhage developed while the anesthetic was being induced, and she died on the operating table. That is one reason why we are so charitable about adjusting our fees so that poor patients will be able to pay hospital bills.

There is a class of patients, though it is not very large, which must be considered. It includes those who must have the best at any price where their health is concerned. Any surgical work done on them is very important, at least to them. No stone may be left unturned to make an operation painless, safe, comfortable and—serious. If that kind of patient must have an operation, he wants to enjoy it. He needs not only the hospital but also a day nurse and a night nurse and his family physician in consultation, and if you do not see that he gets them, Heaven help you! He will begin ordering them after you are through with him, and then where will you be?

Why cannot the question of whether or not the patient should go to the hospital be left to the judgment and honesty of the operator? Why should we feel that we have done a reprehensible deed when, following our best knowledge and belief, we recommend hospitalization? Do the men who decry such practices lie awake nights with gnawing consciences because they have convinced their patients that good but expensive gold fillings should be put in their teeth, though cheap cement fillings might tide them over for a while or even for a long time if they are lucky?

We hold the following premises to be true:

It is well to save the patient expense so long, and only so long, as his health and safety are not jeopardized. The cheapest is not always the most economical, and we are not always certain that the patient wants the cheapest.

634 First Trust Building.

Nitrous Oxid and Oxygen—A Preference for the Extraction of Children's Teeth

By LEONARD N. RAY, D.D.S., Altoona, Pa.

In the handling of children for the extraction of teeth there should never be an air of haste in the office, but a comfortable, quiet, reassuring attitude toward the patient.

Usually the child is accompanied by an older person. The child's attitude can be noted at a glance, whether he is quiet and composed or nervous and panicky. His confidence can usually be gained by a reassuring conversation with the adult. However, what promises are made must not be violated if the child is to retain faith in his dentist and be willing to submit to future dental operations. With the child's confidence reposed in the dentist much work can be done and valuable time saved. All conversation should still be of a reassuring nature that will induce the child to permit an examination of the mouth and teeth, the adjustment of the apron, and other details prior to the anesthetization.

When beginning the anesthetic, tell the child that you are going to place the nasal inhaler over his nose. It may be necessary to place it on your own nose to show the child, and then, adjusting it to the patient, state that it will have a nice, pleasant and sweet odor. Say to him: "Isn't that nice? That's a fine boy! Why, you know how to do it! Full deep breaths now —that's the way," and so on, with an affirmative, reassuring thought in the conversation. Soon he will have gone off to slumberland with pleasant thoughts in his mind, and the necessary work can go on unhampered in a way that would be impossible under a local anesthetic.

In giving nitrous oxid and oxygen to children the flow should be turned on gently, with a steady, even pressure, so as not to startle them with an onrush of the gas or create a smothering sensation, which might mar the tranquillity and depth of the anesthesia.

The induction should begin at one and one-half gallons per minute for three or four inhalations, then gradually increase until four gallons per minute are delivered to the patient of a 90% nitrous oxid and 10% oxygen mixture. This mixture carries the patient for the first thirty seconds and then the percentage of oxygen is lowered to 7% and the nitrous oxid increased to 93%.

It is important to watch for signs of anesthesia, such as eye and muscle reflexes, respiration and color. Nitrous oxid will stimulate the sympathetic nervous system and will enlarge the pupil of the eye, but as surgical anesthesia is approached the pupil contracts, due to the suspension of the sympathetic system, and the eye reflexes are abolished. The muscles may move voluntarily, but are usually quiet, even though not relaxed. The breathing may be full and steady, short and jerky, or long and slow during the induction period, while the color depends upon whether the patient is sanguine or

anemic. The normal color is usually somewhat deepened. Surgical anesthesia is generally obtained in from ten to thirty seconds after the first minute and is accompanied by the following symptoms: lack of eye reflexes; the eyeballs have a glassy appearance and are fixed off center, and the breathing is rhythmic and firm.

Children present a wide anesthetic range, some requiring a surprising amount of nitrous oxid to be carried into surgical anesthesia, while others are carried rather easily. During the induction period it is best if the parent or person accompanying the child retire to the waiting room or at least leave the scene of the operation until it is over, for those unacquainted with the changes that take place under a general anesthetic may become unduly alarmed.

The stages through which children under nitrous oxid and oxygen pass are the same as in adults—though the stages may be more pronounced and pass from one into another more quickly than in healthy adults. The average normal child shows more color than adults.

First stage: Respiration: rapid and full.
Eye: reflex present.
Color: slightly flushed.

Second stage: Respiration: rapid and full.
Eye: pupil dilated, light reflex.
Color: flushed.

Third stage: Respiration: regular, full and easy.
Eye: pupil moderately dilated, reflex absent.
Color: normal.

Fourth stage (the danger stage):
Respiration: light and rapid.
Eye: pupil enlarged and fixed.
Muscles: rigid, jerky.

A fact that should never be forgotten is that *no* general anesthetic is free from its accompanying dangers. Nitrous oxid is no exception.

Many children dread the very thought of a dentist and much more the extraction of a tooth. However, if the child can be induced to take nitrous oxid and oxygen, there are many reasons to commend its choice as an anesthetic. The odor is pleasant, making the induction easy; it is readily eliminated from the system, and recovery is rapid. Sufficient oxygen is presented to sustain metabolism and is always at hand for any emergency. Systemic functions are not affected. Nitrous oxid and oxygen presents a wider margin of safety than other general anesthetics. Post-anesthetic effects are negligible.

Children tolerate nitrous oxid and oxygen as well as adults and are less fearful to return for future operations because the dentist has not violated the confidence that the child has reposed in him.

Central Trust Building

Physical Degeneration*

A Senior Thesis

By ARMAND M. OPPENHEIMER, New York, N. Y.
School of Dental and Oral Surgery, Columbia University '29

Since that remote and unimaginable day when chance comminglement of atoms out of chaos first formed life and fertilized the slowly cooling crust of earth, what strange and various destinies have existed! What mighty, monstrous forms have lived and died, have roamed supreme on sea or land and disappeared! "Où sont les neiges d'antan?"

For two hundred thousand years the Neanderthal man represented the highest development of life, and suddenly, at the end of the fourth glacial age, he vanished. The Crô-Magnons, men with great brains, larger than the average moderns, succeeded them, left in such caves as Altamira testimony of artistic genius unsurpassed today, lived and are gone. Then came the present race.

With the earliest written records we find traces of highly developed civilizations that declined and lost at least their identity in superimposed cultures of inferior conquerors. For perhaps two thousand years the Sumerians, builders at Nippur of the Tower of Babel, were unconquered on the shores of the Mediterranean and the Red Sea. Then they were submerged and there passed in turn the Assyrians, the Babylonians, and the Egyptians. To repeat the olden cry, "Where is the glory that was Greece or the power that was Rome?"

Is the cyclic theory of history correct? Does every culture contain within it the yeast of decay, as life contains death? In the past, destruction has been wrought by the more obvious natural mechanisms. Great cataclysmic changes, such as the prehistoric disintegration of the Isthmus of Gibraltar with the flooding of the fertile valley of the Mediterranean, annihilated the plodding progress of thousands of generations. Famine and pestilence wasted nations. Subtle climatic changes such as Ellsworth Huntington depicted in *Civilization and Climate*, migration or disappearance of animals like the reindeer, variations in flora, and insidious environmental tergiversations have hindered the tender evolution toward higher forms.

Today the potency of these factors is considerably diminished. Facility of travel and communication, speed of transportation, and a measure of intelligence in handling a modicum of knowledge have minimized the threat of episodic environmental dangers. Pestilence and famine also are in a large measure controlled. Is the way cleared for the superman?

Despite the thriving prosperity, the apparent vitality and verve of the age, we hear sounds of warning. Spengler in a masterly study demonstrates that already we are declining. Nordau calls us degenerate. The voice of Zarathustra rises in awful prophecy. Talbot,

* Submitted in Theory and Practice, April 10, 1929.

East, MacDougal, Morel and others lift accusing hands. Whence come the peril and the threat?

No new and ghastly monster rises from the deep. The forces of dissolution have always been with us. Let us first consider their nature, then the accentuating effect of civilization, and finally the prognosis and treatment, if any.

Biologically degenerates must always be produced, although in a state of nature they tend to be eliminated by the operation of the law of the survival of the fittest. We all possess good genes and bad, dominant or recessive. Whether or not our children receive a superabundance of good genes, an equal number of good and bad or a predominantly poor assortment is, to a large extent, chance. Fortunately, of course, there is a tendency to breed true, and the offspring of normal, healthy parents will be predominantly normal. However, there will always be a small percentage of supra-normal and an equal percentage of subnormal. These subnormals will beget subnormals.

The process of adaptation to environment operates by the opposing mechanisms of evolution and involution. Organs necessary to the existence of the organism tend to evolve; those no longer useful tend toward atrophy or involution. In the parthogenetic recapitulation of phylogenetic development, arrest at any level may occur either symmetrically or locally. Such arrested development produces atavism —stigmata of degeneracy. Monsters and the like are born sometimes as a result of prenatal trauma, but usually due to no known cause.

Consanguineous marriage of all but the best stock tends toward degeneracy. Crossing of a superior and an inferior race tends toward the production of inferiors.

So much for a cursory review of what may be called the normal occurrence of degenerates. We shall now consider disease. Certain diseases, such as tuberculosis, transmit definite susceptibility through heredity. Others, like syphilis, tend to produce markedly degenerate offspring. Still others, like epilepsy, are directly transmitted. Certain defects are known to run in families. In the realm of mental diseases, from the hysteric constitution to manic depressive insanity, heredity is the vital factor. Disease is likewise transmitted congenitally and provides a potent source of degenerate types.

We now arrive at a consideration of the effects of civilized environment upon normally endowed individuals. We shall study climate, dietary deficiency and endocrine disturbance, industrial hazards and occupational disease, improper hygiene, drugs and narcotics, psychopathology and obscure degeneration diseases.

Numerous investigators, especially Ellsworth Huntington, have noted the effect of climate upon the physical and mental development. They have recognized that civilization tends to rise in regions favored by temperate climate and moderate barometric variations, and that where these favorable conditions change, races tend to decline. They have observed also that the migration of sturdy stock from a favorable climate to one not so favorable is followed by almost immediate evidence of degeneration in diminished fertility, weaker offspring and an increase in

subnormal individuals, with greater susceptibility to disease.

Overpopulation and crowding into cities, together with the refined foods of the present day, give rise to insidious dietary diseases. Closely interrelated as they are with disorders of the ductless glands, together they form a category of the gravest importance. It is impossible, within the scope of this paper, to enter a detailed discussion of this important phase of the question. We shall only mention its subdivisions. In the first place, there are those subtle and infrequently diagnosed food intoxications, protein poisonings, carbohydrate poisonings, the results of overeating and unbalanced diet. Then there are the vitamin-deficiency diseases, embracing scurvy, rickets, pellagra, beriberi and divers endocrine disturbances. Deficiency of inorganic salts presents another wide variety, including goiter, bone disorders, dental disease and metabolic disturbances. The obscure endocrine disorders, which, according to Berman, are on the increase, present several well recognized syndromes, and, according to the same writer, a number of less easily detected symptoms are almost universally present.

Industrial hazards and occupational disease afford another interesting field for speculation. With child labor abolished and industrial reforms generally initiated, the problems yet remaining are gigantic. The disadvantages of specialization in industry from a health standpoint are serious. Chemical poisonings from lead, mercury, phosphorus, benzol, coal-tar derivatives, radium, etc., in dye works, printing and lithographic shops, petroleum industries, paint factories, clock-dial works, etc., though spectacular, are perhaps only indicative of sub-minimal disorders producing undetected symptoms in hordes of workers. Poor hygiene in the form of improper habits of work, recreation, exercise and rest has been well advertised. Insufficient exposure to the sun's rays, poor ventilation of working and living quarters, overcrowding and unsanitary habits are a widespread source of physical degeneracy.

Drugs such as nicotine, caffeine, alcohol, and narcotics produce definite signs of degeneration in addicts and affect the quality of their offspring.

It is impossible to discuss adequately the immense field of mental disorders. It must suffice to stress the paramount importance of heredity. From the neuroses and hysterias and neurasthenias, through the various psychopathias — criminal, sexual, etc., the gamut of paranoias, dementia praecox, manic depressive insanity, dementia paralytica, lethargic encephalitis, syphilitic insanity, epilepsy, to mention some of the Dominions of the Moon—we discover some of the most threatening tendencies toward degeneration. Finally we arrive at a mixed category, including cancer, blood diseases and cardiac disease, all definitely on the increase.

Having thus sketchily reviewed the modes of physical and mental degeneration, let us endeavor to correlate our observations with sociological trends. Reliable statistics upon which accurate conclusions may be based do not cover sufficient time-periods to allow of absolute conclusions, therefore much that follows is speculative.

Although in the blind development of natural forces uncomplicated by the purposeful interference of human in-

telligence there are stupendous waste and inefficiency, certain it is that annihilation is the reward of degeneration. Is that our fate? Shall we perish and our names be forgotten? It is improbable. Never before has civilization reached such levels or man's control over environment been so highly developed. However, it is imperative to know both the direction of the foe and the strength. There are grounds for believing that degeneracy is on the increase. The reasons are not remote. The Jukes, the Nams, the Kallikaks far outbreed the normal population. In general, the lower the scale of intelligence and economic position, the higher seems the birthrate.

Our college-bred men and women barely replace themselves. Vital statistics, on the one hand, show that the lower 25% of the population tend to furnish 50% of the following generation. On the other hand, questionnaires sent out to the graduates of Wellesley and Barnard indicate that 50% of our college girls do not marry.

A most comprehensive analysis of the mental status of the population of the United States was made possible by the Army intelligence tests during the World War. The results were astonishing. Seventy-five per cent of the picked men of the nation had intelligence quotients too low for high school graduation! Twenty per cent were only slightly above moron level! If we take these figures as indicative of the condition of the population as a whole and add only five per cent for the definitely insane and feeble-minded, who of course were not included in the number of those who took the tests, we have one-fourth of the population mentally degenerate and three-fourths at least poorly endowed. Surely a sad contradiction of the republican tenet of equality! Where is the majesty of the sovereign people?

Although there is no conclusive proof, quantities of reliable statistics indicate that both mental and physical degeneration is increasing. The whole tendency of civilization, with its organized charity and protective policy toward the weak, is to foster and increase the degenerate type.

The life or death of our culture and our race depends upon an intelligent solution of the problem. This solution presents two phases intimately connected with those twin sovereigns, environment and heredity. We must first institute proper hygiene, health habits, balanced dietary, etc. Then we must provide more scientific control of birth. It would be folly in the present infantile state of the science of heredity to advocate anything but the most limited application of eugenics. However, we can, as some of our progressive Middle Western States have done already, eliminate the mating of degenerates and those suffering from inheritable disease.

Perhaps some day a beneficent tyrant, a superman such as the young inventor in *Wings Over Europe,* will be able to force upon the world a social and political system based on Plato's *Republic.* Then we shall have community control of birth, community education of the young in gymnastics, music, the arts and the sciences; a perfect development of the potentialities of the individual and proper selection of those fit to fill the several ranks of society, and government by those only

who, by quality of mind and body and spirit, are able to discern the good of the community.

Then, and then only, will the future of the race be assured. By intelligent application of the knowledge that we possess may we alone hope to vanquish the forces of destruction at our gates.

520 West 183rd Street.

[THE COST OF DENTISTRY]

The lessening of the time required for the completion of a dental course without the lessening of teaching would, in the end, benefit the public, by reason of the fact that in proportion to the cost of obtaining a dental education the cost of dental service to the public will increase. Some one must stand this additional cost, and, as usual, the public pays. In our zeal for the improvement of the status of dentistry, we are liable to overlook one of the most important considerations—furnishing dental service to the rank and file of people, and at a cost which they can afford to pay. While I am fully aware of the value of higher education, it is, nevertheless, my opinion that these wantonly extended courses can claim neither soundness of economics nor efficiency of operation as an excuse for their adoption.

—BYRNES.

One Way to Open a Closed Mouth

By ALBERT HALLENBERG, D.D.S., Fargo, North Dakota

Miss A, aged about twenty, was referred to the hospital clinic as a tetanus case. Her mandibular teeth were closed firmly against her maxillary teeth. Only a glance was required to indicate the probability that she was suffering from inflammation of the tissues around an unerupted third molar.

The patient was able to open the mouth only enough to separate the incisors by about ¼ inch, and it was of course impossible to get into the mouth for operative procedure.

Alternative courses for opening the mouth were available. One was to induce general anesthesia and then forcibly pry the mouth open. The other was to adopt a much slower method of opening.

Forcing the mouth open under an anesthetic is open to some serious objections, even if it does not cause the patient pain. The muscles which hold the mouth closed are usually heavily infiltrated with toxic material; it is, in fact, this infiltration which causes the closure. The forcible opening may drive a lot of this material out of the muscles into the general circulation, and the effect on the patient may be unfortunate. Cases are known in which the styloid process of the sphenoid bone has been broken off by such forcible opening.

A very simple method of opening a mouth in this condition, and one which has been uniformly successful, is to cut a soft rubber bite block, such as is used in general anesthesia cases, into pieces of different thickness and use these as pries.

Even in severe cases the patient can usually open the mouth far enough so that a ⅛-inch piece of the bite block can be slipped between the teeth in the cuspid region, and this is then moved distally until it begins to move the teeth apart. When there is enough separation to admit a piece of the bite block ¼ inch thick, it is put in and moved backward. Such a piece will be somewhat wider than it is thick, and after it has been in place a while and has further separated the teeth, by patient manipulation it can be turned on edge and worked backward. By using several pieces, each a little thicker than those that preceded, it is usually possible in about an hour to get the mouth open wide enough to permit the extraction. This method of separation is practically painless, and no ill effects from it have been observed.

The method of inducing anesthesia in such cases requires careful consideration. It is sometimes of doubtful wisdom to inject tissues so heavily infiltrated as these have to be before they cause such closure. On the other hand, the hemorrhage from such cases sometimes makes the handling of the patient under a general anesthetic difficult.

Proposed Mouth-Hygiene Program for Jersey City, N. J. Schools*

By ISRAEL S. MILLER, D.D.S., New York, N. Y. and Jersey City, N. J.
Chief, Periodontia Clinic, Midtown Hospital, New York; Chairman, Mouth Hygiene and Dental Health Education Committee, Hudson County Dental Society, Jersey City, N. J.

Health workers everywhere fully appreciate the fact that a neglected mouth with its consequent disease touches every one in the community either directly or indirectly. The neglected mouth is a source of danger to the efficiency, health and life of the individual possessing it, as well as to those about him. We know, however, that 95% of dental disease is preventable. We now possess sufficient knowledge which, if applied at the right time, will result in the prevention of dental and oral disease in the great majority of cases and permit the retention of the natural teeth through old age. The problem, then, is to promulgate and apply this knowledge.

In common with mouth-hygiene workers everywhere we fully realize that the public school is the chief medium through which this knowledge can be put to work, and through which dental disease with all its baneful sequela may be controlled and eventually eradicated. The plan of the mouth-hygiene program we desire to present to you for use in our schools is based on the aforementioned facts. That is, prevention is our goal rather than mere repair. This is in harmony with the spirit of modern applied medical and dental science.

The plan has been successfully applied up to the present in the State of Iowa, and in modified form in New York and Philadelphia, and is, therefore, no experiment. It is as follows:

A five-year period is adopted for the mouth-hygiene program. The first year our attention is concentrated upon the first-grade pupils, and only those schools are selected that will offer the best opportunities for a successful demonstration of what mouth hygiene can accomplish. It is well to limit the number of schools in this plan for the first year to permit the most complete use of the facilities at hand. The purpose is:

(A) To get all mouths in the room healthy with no decayed, abscessed, dirty teeth or neglected gums.

(B) To get all children to eat foods that make good teeth.

(C) To get all children to brush their teeth properly, morning and night.

(D) To tell the children that it is desirable that their brothers and sisters of pre-school age do likewise.

Some of the results may be specifically stated, as follows:

It is desired to obtain clean mouths free of disease, healthier bodies for all, nice clean smiles, no more toothaches, better grades and fewer absences, etc. It has been found that children in this class need the most attention and are

*A talk given before the Board of Education, Jersey City, N. J.

This Mouth Hygiene Program is the work of George H. Wandel, D.D.S., of the Department of Dental Health Education of the American Dental Association, and full credit therefor is hereby given to him.

most amenable to treatment. Catching them while they are young facilitates the planting of the idea of mouth health in their impressive minds.

The second year the program is broadened a bit; that is, the work continues with the original group, and the incoming class in the first grade is taken on and treated in the same way. This is carried on each year until the five-year period is reached. By the end of that time the children have been carried over a particularly vulnerable period, and if the work has been well done, a foundation of dental and mouth health has been laid that will adhere to them throughout life.

It is for your Department of Dental Hygiene to work out the details of this plan when put into practice. That it can do so we are fully confident.

There is a host of educational material that is easily procurable and with a minimum expense for use in this permanent campaign. This, too, can be procured by your Department of Dental Hygiene. Permit me to repeat the requisites of mouth hygiene.

Good teeth are built by:

(A) Proper foods.
(B) Use of toothbrush.
(C) Visits to the dentist.
(D) Plenty of sunshine.

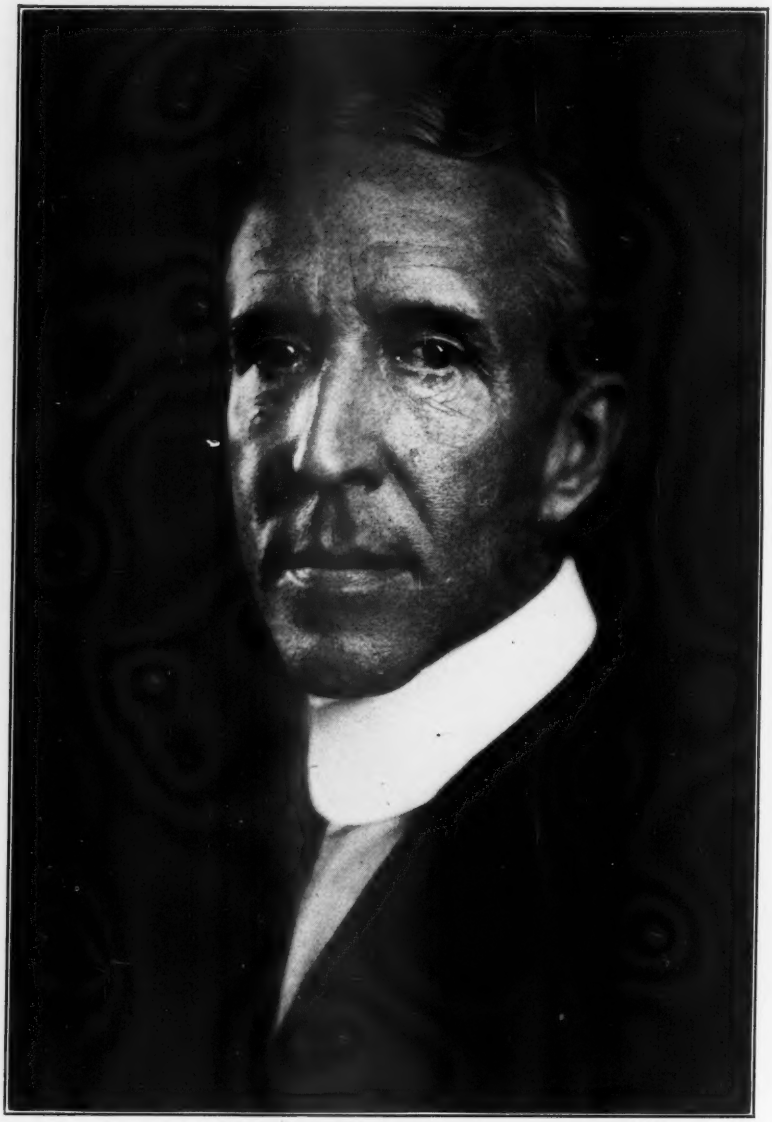
665 Fifth Avenue, New York, N. Y.

100 Montgomery Street, Jersey City, N. J.

[SUPPORT NEEDED]

Almost every dentist now practicing is a graduate of some dental school. In the majority of cases this school is still active or has been merged into a school now active which has thereby inherited its alumni. Each dentist through an active alumni association can be of very definite help to his school.

—WAITE.



VETHAKE E. MITCHELL, D.D.S.

Vethake E. Mitchell, D.D.S.

1872-1929

Vethake E. Mitchell, D.D.S., of New York, passed away very suddenly at his home in Montclair, N. J., on October 4th, in his fifty-eighth year.

Dr. Mitchell was born on August 16, 1872, in London, Ohio, and received his early education in that town. At the age of fifteen, while still in high school there, he entered the office of his uncle, a dentist, where he worked diligently during all his spare hours. He was therefore well prepared to enter dental school, and after the usual dental course he was graduated from the University of Pennsylvania in 1892.

After practicing for some years in London (Ohio), Jersey City and Bayonne (N. J.), Dr. Mitchell located in New York about twenty-five years ago, where he practiced until the day of his death.

Dr. Mitchell's specialty was orthodontia and the prosthetic treatment of oral deformities. He followed in the footsteps of Dr. N. W. Kingsley in developing obturators for cleft palates, and in this line he made a very valuable contribution to dentistry. His work should live long after him.

Dr. Mitchell had for many years been Consultant at the Mountainside Hospital, Montclair, N. J., where his advice was always sought in cases of fractured jaws. He was at one time Lecturer on Surgical Prosthesis in the Columbia University Dental School. He was a member of the First District Dental Society, New York; the Dental Society of the State of New York; the American Dental Association, and the Associated Physicians of Montclair and vicinity.

Besides his widow, one daughter and four sons survive.

Round-The-World Toothache

It is safe to say that none of the rest of the Graf Zeppelin passengers were as glad to get back to Lakehurst as Baron Heinz von Perckhammer, German newspaper man. Of all the dirigible party he must have least enjoyed the round-the-world trip. However pleasant it may have been for his companions, it was an agonizing experience for him.

For at some point after the ship started on its long journey the Baron developed a toothache. Whether the tooth began to throb over the Atlantic, over Siberian wastes or in the Orient is not known, but the throbbing continued as steadily as the humming of the Graf's motors. Though the bag contained an immense store of gas, the pain could not be stopped by the ministrations of dental office gas. Apparently there was no dentist on board, provisions having been made for every emergency except a toothache. Dr. Megias gave him one or more injections of caffeine, and another passenger gave him some sort of neuralgia remedy, but the aching did not cease. It grew worse over the Pacific, and after the dirigible had departed from Los Angeles Baron Perckhammer, who was no more perturbed than others when the ship skimmed over high-tension wires at the California airport, fainted. Why he had not, by radio, made an appointment with a Los Angeles dentist is not understood. Perhaps he thought there would not be time enough.

Among other observations on the marvelous flight of the Zeppelin it may be remarked that this is the first time a toothache had circumnavigated the globe or at least traveled most of the way around the world. The Baron's ordeal, indeed, was as unique as it was painful. To be aboard, with an aching molar, a round-the-world dirigible is truly a distressing plight.—*St. Louis Globe-Democrat.*

Charles Nelson Johnson

Made an Honorary Life Member

At the October (1929) meeting of the Kings County Dental Society, New York, Charles Nelson Johnson was elected to honorary life membership in the Society. This is the fourth time in eighteen years that the Society has bestowed this honor.

DIGESTS

DENTAL ECONOMICS

By C. N. Johnson, M.A., LL.D., D.D.S., M.D.S.

A successful practice must take into account the interests of the patient. There must be equity and justice. It is very easy to figure out what must be charged to secure a satisfactory financial return, but the economic arrangement must also be satisfactory to the patient. If the patient's viewpoint is not considered, the plan is doomed to failure.

A study of costs is necessary and several factors are involved: the conservation of time, a study of the overhead, equitable fees and collections. Fees should be based on a consideration of the time and the character of the operation.

All controversy should be barred from the office. In a satisfactory practice confidence is established between the patient and the operator. It is not necessary to discuss fees, for the patient should feel that he will be treated fairly.

The dentist must handle his earnings so that in old age he will not become dependent on the charity of others.—*The Dental Cosmos,* September, 1929.

FACTORS IN PERIODONTAL TREATMENT

By Austin F. James, D.D.S.

Pyorrhea is purely a local disease and cannot be transmitted from one person to another or from one tooth to another. It is an infection, and diet is only a contributing factor in that the local cell resistance is thereby lowered. When the tissues are freed from bacteria, the infection stops. Normally clean teeth and a healthy mucous membrane are the best evidences of well-being.

Lack of function is a large factor, and abnormal occlusion brings about trauma that must be corrected. Cleaning up the infection is simple, but if the supporting bone has been lost, the tooth must be extracted. If the tooth is merely loose from inflammation, it can be saved. Pockets that harbor bacteria must be eliminated. All calcareous deposits should be removed and the patient instructed in the proper care of the mouth.—*The Journal of the American Dental Association,* September, 1929.

A STUDY OF THE EFFICIENCY OF DENTAL FILLINGS

By C. Jane Fraser, M.A.

In this study nine types of fillings and cements were used, namely: five varieties of copper cement, one variety of copper amalgam, one variety of oxychloride of zinc, two varieties of temporary cement, four varieties of alloy, one variety of gutta-percha stopping, three varieties of gutta-percha, two varieties of silver cement, two varieties of silicate cement.

These filling materials were tested in

regard to their germicidal power, permeability and shrinkage, and it was found that the black and red copper cements were more efficient than the white.

Copper amalgam is a most efficient filling, especially when protected on the oral surface. If not protected, it would probably become permeable because of the disintegration of the copper. It is markedly germicidal.

The silicates were found to be impermeable to bacteria, though one variety was not impermeable to water. Gutta-percha stopping is most inefficient, but gutta-percha properly used should be satisfactory.—*The Journal of Dental Research,* August, 1929.

Foreign Dental Literature

Edited by JOHN JACOB POSNER, LL.B., D.D.S., New York, N. Y.

OVERCOMING THE SENSITIVENESS OF DENTIN WITH TRIOXYMETHYLENE

By D. G. Jasswoin of the State Clinic, Leningrad, Russia

There are two important means of reducing the sensitiveness of dentin: (1) injection of a local anesthetic, and (2) pressure anesthesia. In the former method the objection is often the unpleasantness caused the patient. Pressure anesthesia is usually effective only in deeper cavities and not in shallow sensitive cavities.

A third method is the use of trioxymethylene. This was recommended by Buckley in 1914. The working of the Buckley paste was confirmed. But Prinz showed that the drug quickly penetrated the dentin, entered the pulp and caused the death of the pulp, and he strongly advised against its use.

Owing to the importance of the subject the author has made his own experiments. He made a paste of 50% trioxymethylene, zinc oxid and eugenol. This cement was placed in cavities both shallow and deep and allowed to harden. The teeth contained healthy uninflamed pulps. He found that in deep cavities it worked quickly and produced an increasing pain in from 30 to 60 minutes. In cases where it was not removed by the patient the sensitiveness was gone after 12 to 48 hours, but the pulp was *dead.* In medium cavities there was slight pain for a few hours, but after 12 to 48 hours sensitivity was gone, yet the pulp was noticeably alive. In shallow cavities there was no pain, and after 24 hours the tooth could be drilled painlessly.

In some instances pain was encountered, but after the second application of the paste the excavation could be resumed. The author is convinced that trioxymethylene is excellent, but must be used with good judgment.

The author in experimental work selected several dogs, filling cavities of various depths with the paste. These teeth were subsequently extracted, sections made and the pulp carefully examined. The conclusions are that trioxymethylene is perfectly safe in shallow and medium cavities in reducing the sensitivity of the pulp. Prinz

has shown that the drug acts by cauterizing the living dentin.

In order to use trioxymethylene successfully, there must be a healthy layer of dentin between the cavity and the pulp. A careful review of the literature shows that failure with this drug is due to its employment in deep cavities and in too high a percentage.

In conclusion, the author gives credit to trioxymethylene for two distinct features. It sterilizes the underlying dentin and also stimulates the building up of a large layer of secondary dentin in the region of the pulp beneath the cavity area.—*Zeitschrift für Stomatologie,* August, 1929.

COMPLICATIONS OF FOLLICULAR CYSTS

By DR. F. LAPIDUS, Kiev, Russia

The author has shown in previous writings that the tooth bud in a follicular cyst which has been driven out of place will nevertheless take its proper position in the arch under favorable conditions. The cyst must be gently removed and the buds of the developing teeth carefully allowed to remain where they are. This is opposed to the opinion of the surgeon who believes that once the tooth follicle has been moved it loses its possibility of eruption. There is ample proof to the contrary, and the author shows through convincing radiographs that the tooth bud, pushed out of place by the follicular cyst, will after several years take its proper position in the arch. Conservative procedures are therefore advocated, and these buds of the permanent teeth should not be scooped out of the jaw along with the cyst.—*Zeitschrift für Stomatologie,* July, 1929.

CAUSE OF COMPLICATION IN TOOTH EXTRACTION, WITH SPECIAL REFERENCE TO CONSTITUTIONAL CAUSES

By MEMRAD BRUNSCHWILER

Complications following extraction are frequent and therefore warrant our attention. The author seeks to trace the cause of these unusual cases. He believes that there is a strong constitutional reason based on the different types of individual. The largest number of complications are due to pathological change in the jaw bone or the teeth or both.

Developmental pathology in the anatomy of the superior maxilla might produce a thinning of the antrum wall and allow of easy penetration. Teeth might be abnormally placed. The tuberosity might not be sufficiently attached to the maxilla, so that it might come away with the teeth during extraction.

In pathological changes there is the following classification:

(1) Atrophia caused by
  (*a*) Inactivity.
  (*b*) Senility.
  (*c*) Neurosis.
(2) Disturbance in circulation through hemorrhage.
(3) Inflammation.
  (*a*) Acute, such as osteomyelitis and periostitis.
  (*b*) Chronic, such as osteitis, osteomyelitis, and osteosclerosis.

(4) Necrosis, through phosphorus, radio-active material, x-rays, poison.
(5) Specific inflammation.
  (*a*) Syphilis.
  (*b*) Actinomycosis.
  (*c*) Leprosy.
(6) Secondary change through illness.
  (*a*) Chronic lung inflammation.
  (*b*) Heart failure.
  (*c*) Lues.
  (*d*) Abscess.
(7) Abscess and cyst.

Pathological changes in the anatomy of the teeth, such as odontoma and exostosis, add a great deal to the difficulties encountered in the removal of teeth. The roots may be twisted or hooked, or the apices may become enlarged. Fractured ends left in produce a granuloma with further destruction of bone. Sometimes there is such strong union between the root and surrounding bone that a large piece of process comes away with the tooth, resulting in fracture, deformity or hemorrhage. People of different types have different kinds of teeth. The esthetic person has a graceful slender and twisted root as a rule. The athletic type has strong deep roots.—*Schweizerische Monatschrift für Zahnheilkunde,* August, 1929.

INFLAMMATION OF THE MUCOUS MEMBRANE OF THE MOUTH

By Albin Hentze, Kiel, Germany

A healthy body can protect itself against the entrance of harmful bacteria and destroy those which are already within. It is only when the bacteria get the upper hand through enormous numbers or virulence or lowering of bodily resistance that the body becomes infected. A cold, a chill, or hunger and thirst and undernourishment lower the resistance to disease.

There is no primary stomatitis, for a healthy body will not allow the bacteria of stomatitis to propagate. We see daily a normal mucosa in totally neglected mouths with considerable tartar, yet there are patients who follow a scrupulous mouth hygiene and yet develop stomatitis during an attack of grippe.

Grippe Stomatitis

Grippe stomatitis is a condition which precedes or follows an attack of grippe. Most usually it is the catarrhal form, and since it occasions the patient no inconvenience, he does not visit the physician. The ulcerous type leads him much sooner to the doctor's office, and the aphthous form because of burning and pain causes him to visit the dentist at once.

It is inadvisable to remove teeth or roots in the presence of aphthous or ulcerous stomatitis.

Aphthous Stomatitis

Aphthous stomatitis presupposes a slackening of the blood-vessel walls and an injury to the vaso-motor centers. It often accompanies scarlet fever, heart trouble, measles and other infectious diseases. A good mouthwash is the following:

Vin. ipecac 60.0
Tannate of glycerin 60.00
Solution of formalin 1:1000, 180.0

Spoonful in ½ glass warm water as mouthwash every three hours.

Vincent's Stomatitis

Vincent's stomatitis is treated by the author with internal administration of spirocide. Three to five tablets are taken internally, and a couple dissolved in distilled water and applied to the ulcerous surface.

Massage of the gums is contraindicated in acute inflammation of the gums. — *Correspondenz Blatt für Zahnärzte,* 1929.

[value of diet]

I could tell you of the work of not less than a dozen people who have been striving in the field of nutrition whose work all points in one direction. Notwithstanding, I am here to say to you that I have never seen a case of active pyorrhea cured by dietetic means alone. When once pyorrhea has become well started and the pockets have become deep, I have never been able to diminish the inflammation sufficiently by the most rigidly observed diets advocated by the numerous authors who contend that disease can be limited or cured by diet.

—Hartzell.

DENTAL ECONOMICS

Investments for Dentists

By WALTER S. KYES, D.D.S., San Diego, California

SIXTH ARTICLE

Some 500 years B.C. there was in ancient Iran and Media a religious cult known as Magianism. In the beginning the creed of the Magi was quite commendable for the purposes which it served. They were learned and skilled in divination. About the time that Luke wrote The Acts the name Magi had fallen into disrepute, being then accepted to mean wizardry, the trade of the necromancer and the sorcerer. Neither in the days when the Magian defended his faith nor when he allowed it to fall into disrepute did he possess any more skill as a bamboozler than does the salesman of questionable securities, especially the salesman of wildcat oil stock.

The oil-stock salesman deals in backgrounds of the oil business done in a roseate hue—actually "done in oil." This picture is made up of only about twenty per cent of actual oil-drilling operations, and the salesman keeps us so interested in it that our minds never get to dwell on the eighty per cent of failures until we find ourselves in the possession of the stock of one or more of these.

Wildcatting in oil or mines is usually a highly profitable business for the promoter. It is all velvet for him if he keeps out of the clutches of the law. He does not have to win in order to meet with success. He takes his profits in commissions or lease sales. His business is that of organizing companies and selling stock to the gullible public. First he sets up his office and equips it with stenographers and postage stamps, a sucker list and some embossed blank certificates. He then runs off a few thousand copies of *The Oiler,* leases some ground as near as he can to some oil-producing district, and is at once "all set." It is all very simple and very lucrative.

"We have," he will say, "leased a property in the great Jumbo Fields adjacent to the United States Properties, and that company has already brought in three producers. Dentistry, you know, Doctor, is a little business and is quite all right, but the oil business is a big business. You ought, Doctor, to get into something big. It broadens you. It makes you rich."

This salesman talks so entertainingly, so enthusiastically, and apparently so sincerely that you really begin to wonder how he can do it all for twenty per cent commission on his sales.

Just as buzzards wing their gregarious ways to neglected battlefields, so do certain promoters flock to new oil fields to prey upon the stupidity and ignorance of would-be investors.

To illustrate, in a certain western

city where a new oil field had been brought to production the local board of trade started a law procedure to protect speculators and to throw out of business several hundred unscrupulous promoters. The result was that promotion companies representing $30,000,000 in the aggregate were thrown into bankruptcy.

A knowledge of the means employed by these promoters to get people to invest in their worthless stocks is informative and interesting as well. Trained workers were sent out into the country to the villages and cities for a distance of from two to three hundred miles in every direction. They in turn organized local "camps" and employed men and women to make a house-to-house canvass, distributing sales talks and advertising matter. They offered to exchange oil stocks for anything of value, including the family Ford and the family plate. Preferably they sought cash or, from responsible persons, notes. Failing to secure these, they would accept in exchange for their stocks any kind of security, provided it had an established value. To the really "hard-boiled" person they offered free transportation to the fields, a distance of from two to three hundred miles, and furnished him a hot dinner and a lunch on the way home, insisting all the time that the "hard-boiled" was placing himself under no obligation whatever. In the fields the prospective purchaser was given the acid test. He was taken to the producing district, where the derricks were thick and stained with oil. He saw it flowing into large storage tanks, he heard the thunder of the drills, the hiss of steam, the rumble of trucks, and saw the belching stacks. Everywhere above and even under ground was the flowing, greasy stream, and all the time the siren whispered in his ear. It was a picture done in oil. If the prospective buyer did not yield to this sort of appeal, it was because he had already on some previous occasion been done in oil.

However, in this instance the list of suckers held out especially well and finally a number of city councils passed ordinances prohibiting the companies from doing business on the streets of the various municipalities. Also, the state commission which was supposed to control such matters interfered and the promoters were put out of business, but not before they had milked many a community quite dry of funds and transferred to their pockets literally millions of dollars.

In this instance the promoters made use of what was then a rather new method to interest the gullible. This was made necessary because of the fact that speculation in oil stocks had been rather overworked and the public had become wary. Their plan was this:

Having procured a lease and made a contract for, say, forty acres of land, they cut it up into so-called units and sold these units, consisting of tracts of, say, thirty feet square, for $100.00 per square, reserving certain squares for drilling purposes. Each tract owner was to participate in the year's earnings of the entire property. The selling and developing cost of each unit would be something like fifty per cent, distributed for drilling, commissions to salesmen and payment to the original owner, the balance of $50.00 per unit being velvet for the promoter. That is to say, the promoters got fifty dollars

for each thirty-foot tract in the forty acres, whether the wells were wet or dry. With such a multitude of owners the project could result in nothing more nor less than confusion and loss except to the promoter, who was in a position at that time to step from under and move on with his huge profits to greener fields and a new sucker list.

Not infrequently a number of business and professional men who can afford to risk money and to lose it if need be will band together on an oil-well proposition. Perhaps once in thirty or fifty times these ventures prove profitable and are made to pay, but on the whole it is purely a speculation, a bet with the odds heavily against the speculator. The writer was once invited to join with such a company made up chiefly of physicians and dentists. The plan was to raise $18,000 with which to put down a test well. Not two out of the twenty men involved could afford to lose, and, besides, it was obvious at the outset that the sum which they proposed to raise through the sale of stock was totally inadequate for the purpose in view. However, the thing went through and in six months the well was abandoned. It might be well to mention that the same amount of money invested in real estate would have more than doubled in value in three years, and, besides, it would have represented a first-class investment instead of a wild speculation.

If you invest, say, $1,000 in oil stock, the earning power of your money has depreciated to the sum of $800, or even to $700, before the ink is dry on your check. This represents the salesman's commission on the transaction, and it is at once withdrawn from the business. This sum is but one of the charges for overhead, which is made up of salaries and the other expenses of business.

No investment nor speculation in stocks or in bonds is better than the men who are at the head of the organization. The success of all such enterprises is dependent solely upon the honesty of the men who are to handle the money, so we should be wary when doing business with strangers. Speculation, as the word implies, is nothing more nor less than risky enterprise, and if one cannot afford to lose, one should keep out.

812 Watts Building.

CORRESPONDENCE

The Value of Stereoscopic Radiographs

Editor, DENTAL DIGEST:

On page 605 of the September (1929) issue of THE DENTAL DIGEST, under the caption *An Anomaly,* are three views of an upper central incisor with an unusually distorted root.

Dr. Richard R. Gray of Snoqualmie, State of Washington, is given credit for the photographs, and the reference closes with this statement: "We have never seen a central so markedly abnormal, and the interesting fact is that a radiogram would give no intimation of the extreme curvature of the root."

Had the statement closed, "The interesting fact is that an *ordinary* radiogram would give no intimation," etc., there would have been no occasion for this comment.

The fact of the matter is that the ordinary radiograph gives us but two dimensions—length and breadth. It is quite obvious that, in order to register an appreciation of the extent of the curvature of this particular root, we must have a third dimension as well, namely, depth. If we were to have length, breadth and depth in our radiographic registrations, we should have true pictures of actual conditions. From a diagnostic standpoint this is a very valuable asset, because we cannot very well get a registration of the length, breadth and depth of a tooth itself without at the same time getting a registration of the length, breadth and depth of the surrounding tissue.

There is no denying the fact that the surgical removal of such an anomaly would be greatly facilitated by definite knowledge of the extent of the malformation and its relative anatomical positioning.

This brings us to the point that it is possible for the dental profession to obtain such definite, reliable and desirable radiographic information through the medium of intra-oral stereoscopic radiographs.

A. B. C.

PRACTICAL HINTS

THIS DEPARTMENT IS NOW BEING CONDUCTED FROM THE OFFICE OF THE DENTAL DIGEST. TO AVOID UNNECESSARY DELAYS, HINTS, QUESTIONS AND ANSWERS SHOULD BE ADDRESSED TO EDITOR PRACTICAL HINTS, THE DENTAL DIGEST, 220 WEST 42D STREET, NEW YORK, N. Y.

NOTE—Mention of proprietary articles by name in the text pages of THE DENTAL DIGEST is contrary to the policy of the magazine. Contributions containing names of proprietary articles will be altered in accordance with this rule.

CLEANING HANDPIECES: When handpieces get gummy from the hardening of oil and grease, wash them in chloroform, dry and re-oil.

E. E. C.

REMOVING GOLD CROWNS: I am taking time to write this suggestion for the removal of gold crowns from molars and bicuspids or posterior bridges that have "crown" abutments, with the idea that it may be of value to some reader of THE DIGEST.

I conceived the idea some years ago and have been quite successful in its application and have found it to be practically painless.

With a small round bur drill a hole through the buccal surface of the crown at a point that crosses the occlusal surface of the tooth. Carefully work out all the cement possible with the bur, using larger ones as may be necessary.

When this part of the operation is completed, insert a stout blunt instrument into the opening toward the lingual side, using the tooth as a fulcrum. Work the improvised lever up and down carefully to fracture the remaining cement, then with an upward movement you will be able to roll the crown off toward the lingual.

In removing posterior bridges you will experience greater difficulty, but work on the abutments alternately. When the work is removed, you will have a small hole to repair. If the crowns are made of thin gold, naturally they are going to tear and no method will be advantageous.

H. M. F.

Editor, Practical Hints:

Please tell me if this point in alleged malpractice has been adjudicated upon, and if so, where may the record be found? The defendant is accused of malpractice in leaving the retention of an orthodontia case on the centrals too long, cavities forming under the bands.

H. W.

ANSWER.—We do not find a direct mention of a malpractice suit having been adjudicated on the charge that the defendant dentist left the retention of an orthodontia case on the centrals too

long, resulting in cavities forming under the bands.

On page 114 of *Dental Jurisprudence* by William E. Mikell there is a heading *Liability for Omission to Give Instructions,* and we imagine that under that heading, if the defendant had failed to instruct the patient to return in a reasonable time for the removal of the retention apparatus, there might be some cause, though there is nothing cited that is specific so far as the case you mention is concerned.

On page 132 of the same book, *Effect of Contributory Negligence of Patient* might influence the case. In case the patient had been told to return for periodical examination or for the removal of the retaining appliance and had failed to do so, with the result of decay under the retaining bands, it is possible that the defendant would be absolved from liability. Of course, this is merely the writer's personal opinion in the absence of any other information to the contrary.

There will appear in a short time in THE DENTAL DIGEST an article showing that in one orthodontist's experience there was incipient decay indicated in over twenty teeth in one mouth, and this orthodontist always makes very careful examination of all teeth on which bands are placed and makes note of the fact whether or not there is any indication of decay on the teeth before placing the bands on them, because he has had difficulty along that line.

We do not know what more to add and only regret that we cannot give you something more definite, but it would seem that it would be up to the plaintiff to prove that there was no decay beginning on the teeth or no signs of decalcification, and we should imagine that the burden of proof would be on the plaintiff to show that the retention of the bands on the teeth caused the decay. If there is any other decay in the mouth on teeth which have not been banded or involved in the orthodontic treatment, it might be possible to take that as presumptive evidence that the decay would have happened without the bands, but of course this is a matter which would have to be passed on by some one more conversant with the case than we could possibly be.

Editor, Practical Hints:

A patient, male, 25 years of age, has an ulcerated condition between a number of teeth. The gum septum sloughs and recedes. There is some bleeding and pain, though the gums appear normal in color. I have treated it with silver nitrate, trichloracetic acid and sodium perborate, which gives relief but does not cure the condition. I have advised a medical examination, and the findings are negative.

A. B. J.

ANSWER.—It would seem, from your description of the treatment you have prescribed for your patient, that you are following the accepted course, but, judging from the experience of others, the treatment of these conditions, which are variously diagnosed as trench mouth or Vincent's infection, is in an unsettled state. The basis of the treatment consists of the use of a powerful oxidizing agent, such as sodium perborate. Make a thick paste of the chemically pure

salt of sodium perborate with water and spread it over the teeth and affected areas, working it down between the teeth and under the free margins of the gums. This should be held in the mouth for about five minutes and then rinsed out with warm water. It should be continued daily for a week.

An article by Dr. Brody in the December 1928 issue of THE DIGEST and the article in the July 1929 issue by Dr. Parker might help you in deciding on a diagnosis of this case, but it would seem that if your patient does not respond to the treatment you have employed, his general physical condition should be looked into, and, if he seems to be at all run down or if he has any habits which would contribute to this condition, they should be corrected, at least, during the treatment of the case.

We assume that you have done such scaling of the teeth as conditions would permit and removed all irritating conditions. We further suggest that if your patient is a smoker he be advised to give up the use of tobacco until his mouth is thoroughly healed, because, while smoking would probably not do him any apparent injury if his mouth condition were normal, anything of an irritating nature at the present time simply aggravates the conditions and prevents a proper healing.

We might suggest also that he exclude from his diet all strong condiments, such as pepper, vinegar, mustard, catsup and similar articles of diet, and that he do all possible to build up a strong resistance, because, unless you can secure thorough cooperation on the part of the patient, you cannot expect to effect a cure and your treatment will result in only temporary relief.

We are sorry that we cannot give you something in the way of advice or suggestions of a more encouraging nature, but much depends upon the cooperation of the patient, and it should be impressed on him that unless he eliminates everything of an irritating nature from his diet and habits, if any, he will continue to suffer, and you can be of little help to him.

Editor, Practical Hints:

Can you enlighten me on this case? A young lady has had considerable pain in the region of the left temporomandibular joint. The pain has been present at frequent intervals for over six months and severe enough to cause considerable loss of sleep. I am unable to find anything abnormal in x-ray examination.

My treatment has been the relief of articulation on the left side. This gave relief for just a few days and then the pain was as bad as ever. Your help in this matter will be much appreciated.

E. T. S.

ANSWER.—If after careful clinical and x-ray examinations you are convinced that you have eliminated any possibility of dental origin of the pain of which your patient complains in the left temporomandibular joint, then we believe that the next logical move would be to refer her to an ear specialist, as it is entirely possible that there may be some disturbance in the Eustachian tube. Of course it may be caused by some neuralgic condition, due to a general run-down condition, and, if you are unable to control the pain, it would

be advisable that your patient have a general medical examination, including a blood count, and, if she is found to be anemic, proper treatment should be advised to bring her blood count up to normal, and any other condition which might have a bearing on the case should be treated.

It is practically impossible to give anything like specific suggestions in these cases of pain from removed origin, but they often are the results of a run-down condition and often respond favorably to a general building up of the system.

Editor, Practical Hints:

I should like to ask what you would do in the following case:

A working man presents himself and asks to have a lower left wisdom tooth "pulled." His mouth is in the ordinary condition of the average working man, a little tartar, no cavities, but a slow eruption of the tooth. There is inflammation around the tooth, and the overlapping tissue has become infected and has kept him awake nights. The tooth itself is healthy, with no decay, and he wants it out. He does not have pyorrhea, and there is no distinct sign of Vincent's angina.

For the past twenty-five years I have extracted nearly all teeth in such a condition or removed the overlying tissues.

Suppose you were sure that he had the beginning of Vincent's angina but was suffering from this tooth and insisted that it be taken out, what would you do?

C. C. H.

ANSWER.—The extraction of a tooth is contra-indicated only when Vincent's angina is in the acute stage, at which time the symptoms are unmistakable. In the case you present, the extraction would be advisable, since the flap over the tooth might be the source of the infection. The operation should be governed by the condition of the tissues immediately surrounding the tooth and not by the question as to whether or not the patient has Vincent's.

Editor, Practical Hints:

I should like some advice on a case. I have a patient, a girl, aged 20, who complains of severe pains in her stomach (spasmodic). Her physician says that he can find nothing, but thinks it is just a case of nervous pains. The enclosed x-rays show the second and third molars unerupted on one side and the second molar and possibly the third unerupted on the other. There are no non-vital teeth.

Do you think it possible that these unerupted teeth can be the cause of the stomach pains? The patient claims that she lives normally and eats correctly. The general health seems to be good.

F. A. V.

ANSWER.—If the physician considers that the stomach symptoms are due to a nervous reflex, it is very possible that the impacted teeth are the cause and should be removed. However, it would be just as well not to promise anything to the patient, for the results may be disappointing.

DENTAL SECRETARIES and ASSISTANTS

Secretaries' Questionnaire

All communications should be addressed to Elsie Pierce, care of THE DENTAL DIGEST, 220 West 42d Street, New York, N. Y.

NOTE—HAVE YOU A BETTER WAY? HAVE YOU A TIME-SAVING SHORT CUT? DO YOU KNOW A "STUNT" THAT LIGHTENS THE WORK OR MAKES FOR GREATER EFFICIENCY IN THE OFFICE? IF SO, WRITE TO ELSIE PIERCE. YOU MAY HELP MANY GIRLS WHO ARE BEGINNERS—AND YOU KNOW HOW YOU NEEDED HELP DURING YOUR FIRST FEW MONTHS IN A DENTAL OFFICE. PERHAPS YOU NEED HELP NOW. WRITE TO ELSIE PIERCE—SHE WILL HELP YOU.

Dear Miss Pierce:

In several of your articles I have noticed that you mention "practical psychology." Kindly let me know if there are any books published on this subject, and where I can secure them. I am keenly interested in this line of study. A. H. F., New Jersey

ANSWER.—There are many books on psychology, and it is rather difficult to give you what you may desire. However, we have selected a few which should be of interest and advantage to you: *Introduction to Psychology,* by Angell; *Outline of Psychology,* by McDougal; *Elementary Psychology,* by Gates; *Psychology,* by James, also by Woodworth. If you want something on a little different note, read *Why We Misbehave,* by Schmalhausen.

The librarian at your public library should be able to supplement this list, if you will explain to her just what you are interested in.

Dear Miss Pierce:

In choosing my vocation I have decided to study dental nursing. Please send me full particulars, including the names of schools at which I may study. I am interested in going to a school near my home State.

I. M., North Carolina

ANSWER.—As you do not state clearly whether you desire to be a dental hygienist or a dental assistant, I am at sea for a reply. The term *dental nurse* is applied to both by many people.

If you wish to study for dental hygiene, the nearest school to you would be at Philadelphia, Pa., either the University of Pennsylvania or Temple University. A letter to the Director of the School of Hygiene at either college will bring you full information about their course.

Columbia University Dental School, New York, also has a course for dental hygienists. Northwestern University

Dental School at Chicago, Ill., gives a combined course in hygiene and assisting. We believe that the school for dental assistants at the Dental Department of the Medical College of Virginia, at Richmond, Va., has been temporarily discontinued.

If it is not possible for you to go to Philadelphia, why not secure a position in a dental office in a near-by city, where you can learn many of the details of dental assisting, supplementing this daily training with reading matter? If you will secure the issues of THE DENTAL DIGEST for the past year, you will find therein many articles of value that should help you in your work.

Dear Miss Pierce:

It is now exactly two years since I wrote to you, and I wish to tell you how highly I value the Questionnaire. It certainly has been a wonderful aid to me, especially in the first few months of my training in the office. I am employed by two dentists and at first I found it very hard to be always on the alert for both. However, I have overcome that difficulty and I now can assist both as well as I could one.

The first thing I learned to do was to find out all about the methods of each doctor and then I trained myself to follow them carefully. I also tried in every way to make use of any spare moments I might have in reading some of the literature that would help me in my work. There are a hundred or more ways about which I could tell other assistants that would make them an asset to their office instead of merely an "office girl." I find my work most interesting and never is the daily routine dull, as, when I first started assisting, I made up my mind that I should like my work, and that I would become a part of it. I have the ambition to train as a nurse or as a dentist, which I hope in the course of a year I may do.

Winnipeg, Canada

We print this letter because we believe it will be an inspiration to every dental assistant who reads the Questionnaire. It certainly proves that "where there is a will there is a way," and that where one has succeeded others can. We congratulate "Winnipeg" in her desire for further advancement in the professional field of service and feel sure that if she applies the same perseverance and earnestness of purpose to her future training she will be a success, one that all women, especially dental assistants, can be proud of.

Dear Miss Pierce:

I have worked in a dental office for a short time. There is a brownish substance on the sinks which I have been unable to remove. Please advise how to remove these stains.

I enjoy reading your Questionnaire very much, and any advice I may receive will be greatly appreciated.

V. B., Kansas

ANSWER.—We take it that you are talking of white-porcelain hand-basins being stained, and we wish you had given us an inkling as to what has caused the stains, as each chemical must be treated in a definite manner. However, try the following:

Mix a strong solution of oxalic acid, apply with a stiff brush and let remain for as long as the stains remain. Then

rinse off carefully, also being careful not to spill any on your hands or gown or linen. It may take several applications to reduce the stains. If the stains have been caused by iodin, apply a concentrated ammonia solution in the same manner. If they have been caused by ink, apply iodin, then ammonia. Should this not help you, write us again, giving the name of the medicament that caused the stains.

Dear Miss Pierce:

I do hope you will assist me in this matter. I have had a great deal of trouble cleaning the saliva ejectors. Could you help me in solving this problem? R. E., N. Y.

ANSWER.—You do not state whether the saliva ejectors are glass, porcelain or metal. If glass or porcelain, place in a vessel of cold water with soap powder and boil for about five minutes or sufficiently long to loosen the debris adhering to the sides. Then use a pipe-cleaner to remove any particles that may still adhere to the tube, rinse in clean water, and sterilize.

If the ejectors are of metal, boil in water to which has been added bicarbonate of soda or borax, and complete the cleaning with pipe-cleaners. The pipe-cleaners can be bought at any store dealing in smoker's articles and come in various sizes.

Educational and Efficiency Society for Dental Assistants, First District, New York, Inc.

A regular meeting of the Educational and efficiency Society for Dental Assistants, First District, New York, Inc., was held at the Academy of Medicine, 2 East 103rd Street, New York, on Tuesday evening, October 15, 1929. Dr. Martin Dewey, President of the First District Dental Society of New York, was the speaker of the evening. There were also reports by State delegates to the American Dental Assistants Association Convention at Washington, D. C., October 7-10, and a short address by Sylvia Danenbaum, an officer of the Society.

At the regular meeting of the Educational and Efficiency Clinic Club on September 16th Dr. S. Abraham presented an instructive and interesting lecture-clinic on orthodontic assistance. The speaker stressed the importance of records in orthodontia, showing the duties of the assistant in making models, charts and photographic records of cases. Dr. Abraham outlined the qualifications and duties of the dental assistant, emphasizing particularly the necessity of professional dignity and the use of care and tact in handling children. The Clinic Club meets regularly on the third Monday evening of each month, September to May, inclusive, when a phase of dental assisting is analyzed and explained and in the incidental discussion more progressive methods of dental assisting are evolved. Members of the Society are eligible to join the Clinic Club and are urged to

become members. The Secretary, Gertrude Gehm, may be addressed at 921 Bergen Avenue, Jersey City, N. J.

Classes on subjects pertinent to the work of the dental assistant are being formed and will begin shortly. The sessions will be held on one evening each week under the direction of competent instructors and will include such topics as first aid, secretarial assistance, chair assistance, sterilization, laboratory technic, x-ray assistance, telephone courtesy, speaking and parliamentary procedure, and diet. All members of the Society are welcome at the meetings of the classes.

The Library contains many articles of value to the dental assistant on dental topics, as well as a book of suggestions for improved office procedure and a pictured history of dentistry and dental equipment. These are available to members.

The Society meets regularly on the second Tuesday evening of each month, October to May, inclusive, at the Academy of Medicine. Its purpose is to further the education of the dental assistant and to afford her an opportunity for development. There is no registry, and the Society is not connected with any commercial enterprise. Dental assistants employed in ethical dental offices are invited to join and may communicate with the President, Ethel R. Meyerson, at 1673 University Avenue, New York. The date of the next meeting is Tuesday, November 12, 1929, at 8 P. M.

A cordial invitation to attend the meetings of the Society is extended to the members of the dental profession and to their assistants.

EXTRACTIONS

No Literature can have a long continuance if not diversified with humor—ADDISON

Did you hear about the Scotchman who stayed up all night to watch his wife's vanishing cream?

"Who invented high heels?" asks a writer. One theory is that it was the idea of a short, pretty girl who was continually being kissed on the forehead.

Dieticians say hash contains vitamins. Well, if any other foods contain vitamins, hash just naturally has to.

(Teacher)—What did Juliet say when she met Romeo on the balcony?

(Pupil)—Lissen. Couldn't you get seats in the orchestra? The idea of being up here!

All janitors go to heaven. If there were any down yonder the place wouldn't have such a reputation for warmth.

"What funny names these Chinese towns in the news have," remarked a man from Schenectady as he read a Poughkeepsie newspaper on his way to meet a friend in Hoboken.

(Algy)—May I kiss you, dear?

(Flapper)—Heavens! Another amateur.

Good Old Mark

Mark Twain was visiting in Washington during the time that Melville Fuller was Chief Justice of the Supreme Court. A little girl saw Mark Twain on the street and, mistaking him for the Chief Justice, whom he resembled because of his luxuriant white hair and moustache, approached him and said, "Oh, Mr. Chief Justice Fuller, won't you please write something for me in my autograph album?" "With pleasure," Mark replied instantly. Taking the book she handed him, he wrote, "It's glorious to be full, but it's heavenly to be Fuller."

Wrong Diagnosis

"Doctor, my eyes are bothering me a bit; see what you can do for me in the way of glasses."

"Take a seat, sir. And now tell me what kind you've been wearing."

"None, I've never worn glasses in my life. Never needed 'em before."

"Indeed! You will pardon my mistake, but I judge from the mark on the bridge of your nose that you—"

"Oh! That mark? I got that from drinking homebrew out of a fruit jar."

High water does not necessarily raise the price of milk.

It is easier to dodge an elephant than a microbe.

"Time is money," but no one knows it is noon by looking at a dime.

(John)—You women bear pain more heroically than men.

(Jane)—I suppose a dentist told you that?

(John)—No, a shoemaker.

A scientist says that plants are nearly human. Flowers and vegetables have nervous systems, and he goes so far as to say that a parsnip has a soul. It goes to a parsnip paradise when it dies—only good ones, of course—the bad ones naturally winding up in a New England boiled dinner.

Page Wall Street

"I see in the paper that a widower with nine children out in Nebraska has married a widow with seven children."

"That was no marriage. That was a merger."

(Wide Pants Willie)—Where are you going my pretty maid?

(Maid)—Got any money with you?

(Willie)—Oh, a dollar or so.

(Maid)—Well, it's none of your damn business where I'm going!

Little Betty was a bright child, and was a real enthusiast in regard to the radio. She learned to appreciate the programs, and remembered many of the broadcasting terms, as the following incident shows: A few evenings ago, when saying her little prayers before retiring, she ended this way— . . . "and, Lord, this concludes the program for today, so good night and toodleoo."

Auto Bits From a Graveyard

Here lies the remains of Percival Sapp,
He drove his car with a girl in his lap.
Lies slumbering here, one William Blake,
He heard the bell but had no brake.
Beneath this stone lies William Raines,
Ice on the hill, he had no chains.
Here lies the body of William Jay,
He died maintaining the right of way.
John Smith lies here without his shoes,
He drove his car while filled with booze.
Here's Mary Jane—but not alive—
She made her Ford do thirty-five.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912,

OF THE DENTAL DIGEST
at NEW YORK, N. Y.

Published monthly
for October 1, 1929.

State of New York, } ss.:
County of New York, }

Before me, a Notary Public in and for the State and county aforesaid, personally appeared Seeley Vander Veer, who, having been duly sworn according to law, deposes and says that he is the Assistant Secretary of The Dentists' Supply Co. of New York, Publishers of THE DENTAL DIGEST, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 411, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business manager are:

NAME OF	POST OFFICE ADDRESS
Publisher, THE DENTISTS' SUPPLY CO. OF NEW YORK	220 West 42nd St., New York, N. Y.
Editor, GEORGE WOOD CLAPP	New Rochelle, N. Y.
Managing Editor, GEORGE WOOD CLAPP	New Rochelle, N. Y.
Business Manager, L. W. DUNHAM	New Rochelle, N. Y.

2. That the owners are:

THE DENTISTS' SUPPLY CO. OF NEW YORK	220 West 42nd St., New York, N. Y.
THE AMALGAMATED DENTAL COMPANY, LTD.	5-12 Broad Street, London, England
LEWIS L. FAWCETT	1347 Dean St., Brooklyn, N. Y.
LEROY FRANTZ	Davenport Neck, New Rochelle, N. Y.
GERTRUDE L. FRANTZ	221 Cheyenne Road, Colorado Springs, Colo.
VIOLA F. GOOD	45 Pintard Ave., New Rochelle, N. Y.
DEAN C. OSBORNE	839 St. Marks Ave., Brooklyn, N. Y.
SADE E. L. OSBORNE	839 St. Marks Ave., Brooklyn, N. Y.
JOHN R. SHEPPARD	155 Riverside Drive, New York, N. Y.
JOHN R. SHEPPARD, Trustee for John R. Sheppard, Jr.	220 West 42nd St., New York, N. Y.
RUTH A. P. SHEPPARD	155 Riverside Drive, New York, N. Y.
ETHEL F. TOMB	167 Lake Ave., Newton Centre, Mass.
GEORGE H. WHITELEY	905 S. George St., York, Pa.
GEORGE H. WHITELEY, JR.	121 W. Springettsbury Ave., York, Pa.
J. OSBORNE WHITELEY	905 S. Beaver St., York, Pa.
LILLIAN S. WHITELEY	905 S. Beaver St., York, Pa.

THE AMALGAMATED DENTAL COMPANY, LTD., is a corporation organized under the laws of England, with an authorized capital stock of £2,850,000, ownership of which is scattered over a considerable part of Europe and includes a long list of names unknown to us, and probably a number of banks and other corporations.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

THE DENTISTS' SUPPLY COMPANY OF NEW YORK,
SEELEY VANDER VEER, *Asst. Sec'y.*

Sworn to and subscribed before me this 27th day of September, 1929.

[SEAL] EMILIE S. SCHOPP
Notary Public, Westchester County
Certificate filed in New York County
Clerk's No. 991, Register's No. 1-S-687 My commission expires March 30, 1931.

FUTURE EVENTS

EASTERN DENTAL SOCIETY OF NEW YORK

SCIENTIFIC SESSION

Thursday Evening, November 7, 1929

Meets the first Thursday of each month from October, 1929, to May, 1930.
Meeting Place: 425 Lafayette Street, New York
Essayist: Edward Kennedy.
Subject: *Planning of Restorations.*
Round Table Discussions (In Amphitheatre): 8:15 P. M. Sharp
Subject: *Planning of Restorations.*
Leader: Clyde H. Schuyler.

EASTERN DENTAL PROGRESSIVE CLINICS

A series of clinics covering the subject of *Planning of Restorations* in detail will begin promptly at 7:30 P. M.

Clinicians: Zachary Blum—*The Lessons from Our Failures in Restorations.*
I. Brown—*Use of Precision Attachments in Partial Restorations.*
Joseph R. Burk—*Impression Technic.*
Samuel Doskow—*Planning of Restorations.*
Arthur Feinberg—*Planning of Partial Dentures.*
Charles E. Kennedy—*The Continuous Lingual Clasp.*
Meyer Kremen—*Sectional Compound Impressions for Partial Restorations.*
Leo Gordon Pollock—*Round Wire Clasp Designs.*
William S. Prensky—*The Peeso Attachments in Partial Restorations.*
Charles Schmer—*Intra-Dental Attachments Suitable for Partial Dentures.*
J. R. Schwartz—*Strategic Factors Concerning the Planning of Partial Restorations.*
Howard T. Stewart—*Planning Restorations for Pyorrheal Cases.*
Victor Stoll—*Partial Restorations.*
H. E. Tompkins—*The Advantages and Disadvantages of Flexible Materials as Impression Media.*

PAUL DAVID, *President,*
LOUIS LERNER, *Chairman Executive Committee,*
11 West 42d St., New York.

THE INDIANA BOARD OF DENTAL EXAMINERS will meet at 8 A. M., November 11, 1929, at the State House, Indianapolis, Indiana, in the room of the House of Representatives, for the purpose of examining all applicants with proper credentials. Applications should be in the hands of the secretary one week before the Board meeting.

For applications, clinical requirements and other information, address

J. M. HALE, *Secretary-Treasurer,*
Mt. Vernon, Indiana.

THE CONNECTICUT DENTAL COMMISSION will meet at Hartford, Conn., on November 18-21, 1929, for the examination of applicants for license to practice dentistry and dental hygiene and to transact any other business proper to come before it.

Applications should be in the hands of the Recorder at least one week before the meeting. For application blanks and further information, apply to

ALMOND J. CUTTING, *Recorder,*
Southington, Conn.

A competitive examination for appointment to the DENTAL CORPS OF THE UNITED STATES NAVY will begin on December 2, 1929, at the U. S. Naval Medical School, Washington, D. C. Candidates must be citizens of the United States, between 21 and 32 years of age at the time of appointment, and graduates of recognized dental schools. The examination will be both theoretical and clinical, and the usual duration is about seven days. A circular containing full information relative to the Dental Corps and the prescribed form of application may be obtained from the Bureau of Medicine and Surgery, Navy Department, Washington, D. C. No allowance is made for the expense of applicants appearing for examination.

C. E. RIGGS, *Surgeon-General,*
U. S. Navy.

GREATER NEW YORK DECEMBER MEETING FOR BETTER DENTISTRY

Plans are rapidly approaching completion for the *December Meeting for Better Dentistry* which will be held at the Hotel Pennsylvania, New York, December 9-13, 1929, under the auspices of the First and Second District Dental Societies. This is the Fifth Annual Meeting and

bids fair to be the largest and best which has thus far been held. The clinic program for the registered clinics will be ready for distribution about November 15th and, owing to the growing popularity of this meeting, it will be advisable to make reservations as early as possible.

The meeting will be conducted on the same plan as previous meetings, i.e., one fee admits members to all lectures, clinics, etc.

The following essayists and clinicians have accepted invitations to be present: Chalmers J. Lyons, Ann Arbor; Emory C. Thompson, Buffalo; J. R. Clayney, Austin F. James, John La Due, Joseph L. Ube, Chicago; Hugh W. MacMillan, Carlos H. Schott, Cincinnati; Theodore W. Maves, Cleveland; P. Kyprie, Charles A. Lane, Albert L. LeGro, Detroit; Dayton D. Campbell, Kansas City; Matthew N. Federspiel, Milwaukee; R. Boyd Bogle, Nashville; James H. Prime, Omaha; Wallace Seccombe, Toronto.

There will be a manufacturers' exhibit in the Roof Garden and Salle Moderne of the hotel during this meeting.

THE DENTAL PROTECTIVE ASSOCIATION OF THE UNITED STATES will hold its annual meeting at the Palmer House, State and Monroe Streets, Chicago, Ill., on December 16, 1929, at 4:00 P. M. The reports of the officers will be given, a Board of Directors will be elected, and such other business as should come before the Association will be transacted.

All members are urgently requested to be present.

J. G. REID, *President,*
D. M. GALLIE, *Vice-Pres. and Treas.,*
E. W. ELLIOT, *Secretary.*

THE CHICAGO DENTAL SOCIETY

SIXTY-SIXTH ANNUAL MEETING AND CLINIC
JANUARY 13-15, 1930

The Chicago Dental Society wishes to announce the 1930 Annual Meeting and Clinic at the Stevens Hotel, where full provision is made for the comfort of all those in attendance. The experience of conducting the 1929 Meeting at the Stevens has provided a basis for conducting the next meeting, which without doubt will reflect in a substantial measure the increasing importance of this annual event.

All members of the American Dental Association are cordially invited to attend. Preliminary programs will be mailed to all members of the A. D. A. some time in December of this year. The program will be divided into eight sections, as follows:

Section I—Operative Dentistry.
Chairman: Frank G. Conklin, 4010 West Madison St.
Vice-Chairman: A. E. Schneider, 25 East Washington St.

Section II—Full Dentures.
Chairman: E. C. Pendleton, 916 Galt Ave.
Vice-Chairman: S. A. Hutt, 3166 Lincoln Ave.

Section III—Partial Dentures; Crown and Bridge.
Chairman: W. I. McNeil, 59 East Madison St.
Vice-Chairman: R. A. Jentzsch, 185 North Wabash Ave.

Section IV—Oral Pathology, Histology, Bacteriology and Chemistry.
Chairman: J. R. Blayney, 2209 Rosemont Ave.
Vice-Chairman: W. G. Skillen, 311 East Chicago Ave.

Section V—Mouth Hygiene and Public Health.
Chairman: Lon W. Morrey, 4235 North Hermitage Ave.
Vice-Chairman: Corvin F. Stine, 1319½ Estes Ave.

Section VI—Orthodontia.
Chairman: Abram Hoffman, 311 East Chicago Ave.
Vice-Chairman: Harris W. McClain, 55 East Washington St.

Section VII—Oral Surgery and Radiography.
Chairman: Roscoe L. Stout, 55 East Washington St.
Vice-Chairman: Joseph G. Wiedder, 25 East Washington St.

Section VIII—Dental Economics.
Chairman: Harold S. Smith, 180 North Michigan Ave.
Vice-Chairman: F. van Minden, 185 North Wabash Ave.

The Program Committee is under the direction of Stanley D. Tylman, assisted by Henry C. Lee, E. C. Pendleton and Roscoe L. Stout.

The manufacturers' and dealers' exhibits will be held in the spacious Exhibit Hall, one flight down from the main floor. All applications for exhibit space should be directed to Dr. C. Davidson, Chairman Exhibit Committee, 55 East Washington St., Chicago, Ill.

HUGO G. FISHER, *President,*
HOWARD C. MILLER, *Secretary,*
55 East Washington St., Chicago, Ill.

THE PENNSYLVANIA STATE DENTAL SOCIETY will hold its Mid-Winter Meeting January 30-31, 1930, at the Penn-Harris Hotel, Harrisburg, Pa. A splendid program is being prepared.

RICHARD D. CROWLEY,
111 North Second St., Harrisburg, Pa.

THE NORTH CAROLINA DENTAL SOCIETY will hold its next annual meeting at Asheville, N. C., May 5-8, 1930.

DENNIS KEEL, D.D.S., *Sec't-Treas.,*
Greensboro, N. C.

THE DENTAL SOCIETY OF THE STATE OF NEW YORK will hold its sixty-second annual meeting on May 13-16, 1930, at the Hotel Commodore, New York, N. Y.

In addition to the usual excellent scientific program and general clinics, the first two days there will be conducted a series of educational clinics.

Full descriptive detail and information regarding enrollment will be published at a later date.

Mark off these dates now!

WILLIAM C. FISHER, *President,*
A. P. BURKHART, *Secretary,*
57 East Genesee St., Auburn, N. Y.